

**CYSF Logbook**  
**2023-2024**

**School:** Stem Innovation Academy

**Name:** Kasturi Savai, Prisha Parmar

**Grade:** 9 (Kasturi), 8 (Prisha)

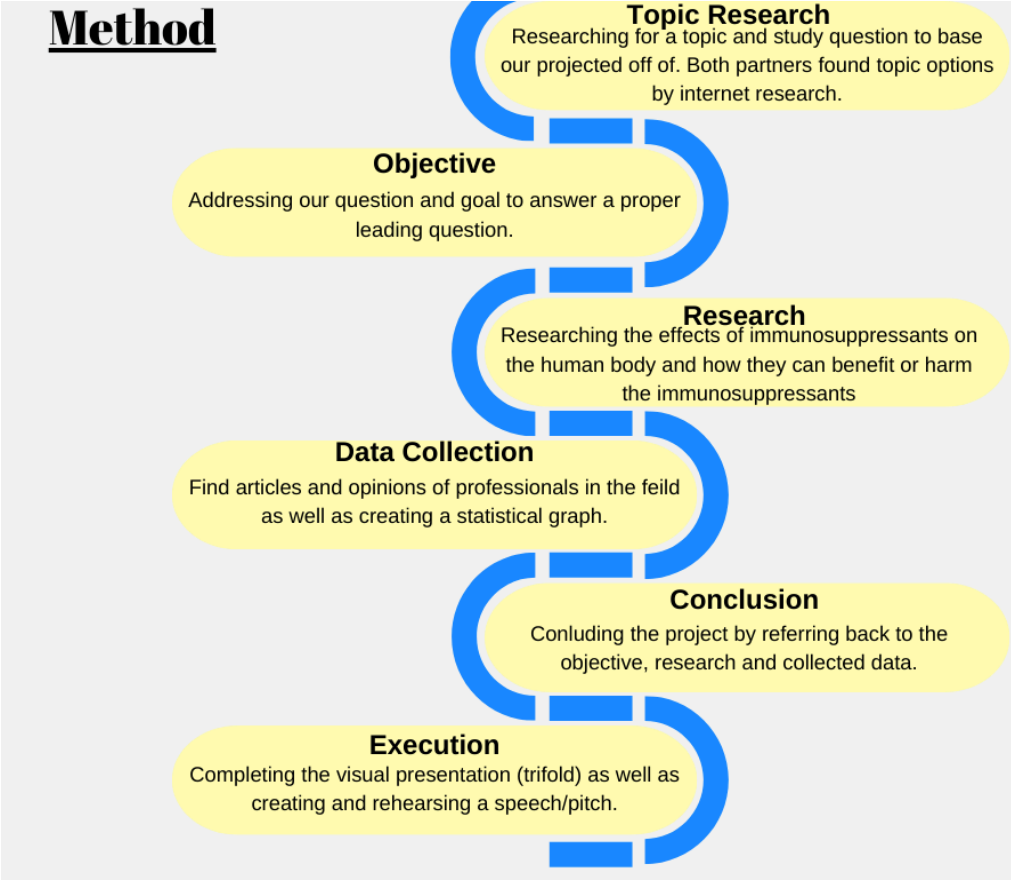
**Project title:** Impacts of Immunosuppressants

**Project:** What are the effects of immunosuppressants on the human body and how can they benefit or harm our immune system?

**Type of project:** Research/Study

Dates	Notes, Research & Context
September 28, 2023 Entry #1	<p><b>Completed To-Do</b></p> <ul style="list-style-type: none"> <li>● Face timed to research topics and find points of interest.</li> <li>● Thought of different branches of science to help guide us in selecting our topic.</li> <li>● Read brief descriptions of each topic to select and narrow down our options:</li> </ul> <p><b>Topic Search</b></p> <ul style="list-style-type: none"> <li>● Research, experimental, innovation? <u>Research</u></li> <li>● Botany (Plant Science): Angiosperms, Plant Hormones and Growth</li> <li>● Biology: ?</li> <li>● Biomedical: Nanoscience / Nanotechnology</li> <li>● Physics: Small modular reactors</li> </ul>
October 1, 2023 Entry #2	<p><b>Completed To-Do</b></p> <ul style="list-style-type: none"> <li>● Researched topics and potential questions.</li> <li>● Explored through question choices and narrowed down to three questions.</li> <li>● Decided to talk to Ms. Bretner for her opinion</li> </ul> <p><b>Topic Question Ideas to Finalize</b></p> <ul style="list-style-type: none"> <li>● What are epigenetics and how do they influence gene expression?</li> <li>● How can tissue engineering improve the after effects of a non-fatal accident?</li> <li>● What are the effects of immunosuppressants on the human body and how can they benefit or harm our immune system?</li> </ul>
October 3-12, 2023	<b>Completed To- Do</b>

<p>Entry #3</p>	<ul style="list-style-type: none"> <li>• Asked for an extension to finalize our topic as we needed some extra time for further research.</li> <li>• Talked to Ms. Bretner to finalize our question</li> </ul> <p><b>Our Finalized and Revised Question</b></p> <ul style="list-style-type: none"> <li>• What are the effects of immunosuppressants on the human body and how can they benefit or harm our immune system?</li> </ul>
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<p>October 16, 2023 Entry #4</p>	<p><b>Completed To-Do</b></p> <ul style="list-style-type: none"> <li>• Wrote our method and strategy for completing our project.</li> <li>• Attempted to log into CYSF platform (failed- need to check with Ms. Bretner and sort the issue)</li> </ul> <p><b>Method</b></p>  <pre> graph TD     A[Topic Research] --&gt; B[Objective]     B --&gt; C[Research]     C --&gt; D[Data Collection]     D --&gt; E[Conclusion]     E --&gt; F[Execution]   </pre> <p><b>Method</b></p> <p><b>Topic Research</b> Researching for a topic and study question to base our projected off of. Both partners found topic options by internet research.</p> <p><b>Objective</b> Addressing our question and goal to answer a proper leading question.</p> <p><b>Research</b> Researching the effects of immunosuppressants on the human body and how they can benefit or harm the immunosuppressants</p> <p><b>Data Collection</b> Find articles and opinions of professionals in the feild as well as creating a statistical graph.</p> <p><b>Conclusion</b> Conluding the project by referring back to the objective, research and collected data.</p> <p><b>Execution</b> Completing the visual presentation (trifold) as well as creating and rehearsing a speech/pitch.</p>
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<p>November 12, 2023 Entry #5</p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>• Researched medical/medicine experts across the web for possible people to conform with.</li> </ul> <p><b>Possible websites/experts:</b></p>
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	<ul style="list-style-type: none"> <li>University of Calgary</li> </ul>
November 12, 2023 Entry #5	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>Researched medical/medicine experts across the web for possible people to conform with.</li> </ul> <p><b>Possible websites/experts:</b></p> <ul style="list-style-type: none"> <li>University of Calgary</li> </ul>
November 20, 2023 Entry #6	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>Created an objective</li> <li>Researched baseline information about immunosuppressant drugs.</li> </ul> <p><b>Objective</b></p> <p>The purpose of this research is to understand what immunosuppressants are and how they can affect the human body, both negatively and positively. Immunosuppressants can benefit a weak human immune system by boosting the human body's immune system for various things. However, immunosuppressants can also aggravate the immune system resulting in infections, organ dysfunction and more. By using statistical data and information from medical expertise, this research concludes the consumption of immunosuppressants by comparing its different factors.</p>
December 15, 2023 Entry #7	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>Decided the research questions/ things to address:</li> <li>What is the immune system and its functions?</li> <li>What are immunosuppressants?</li> <li>What are some pros of immunosuppressants and how do they help the human body?</li> <li>What are some cons of immunosuppressants and how do they cause harm to the human body?</li> <li>Types of immunosuppressants</li> </ul>

	<ul style="list-style-type: none"> <li>● Expert research and thoughts</li> <li>● Data/ graph of immunosuppressant users</li> <li>● Who would immunosuppressants affect (which differences/abnormalities in human bodies that can cause the need of immunosuppressants)?</li> <li>● Are immunosuppressants required?</li> <li>● When and where were they invented</li> <li>● Data</li> </ul>
<p>December 18, 2023 Entry #8</p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>● Met together to address/ research 2 questions</li> <li>● Divided the research equally between both members</li> </ul> <p><b>Q1: What is the immune system</b></p> <ul style="list-style-type: none"> <li>● The immune system is a complex apparatus containing structures of several organs and cells, defending the human body against contamination. By keeping records of previous infections, this system can recognize and break microbes swiftly.</li> <li>● The immune system is broken down into two parts, there is the innate immune system which is considered the nonspecific immune system (does not attack specific pathogens) and there is the adaptive immune system which is considered the specific immune system as it attacks specific pathogens. These subsystems work together when an immune response is triggered due to viruses/diseases.</li> </ul> <p><b>Key Definitions (presentation focused)</b></p> <ul style="list-style-type: none"> <li>● <b>Antigen:</b> an antigen is a foreign substance which causes the body to elicit an immune response</li> <li>● <b>Pathogen:</b> a pathogen is a disease-causing organism</li> <li>● <b>Antibodies:</b> antibodies bind to antigens to remove the foreign antigen through various mechanisms, and can also activate complement proteins which help kill pathogens</li> <li>● <b>B cells:</b> b cells bind to antigens which produce antibodies</li> <li>● <b>T cells:</b> recognize processed antigens, they attack targets by releasing chemicals. There are two types of t cells, helper t cells and cytotoxic t cells.</li> </ul>

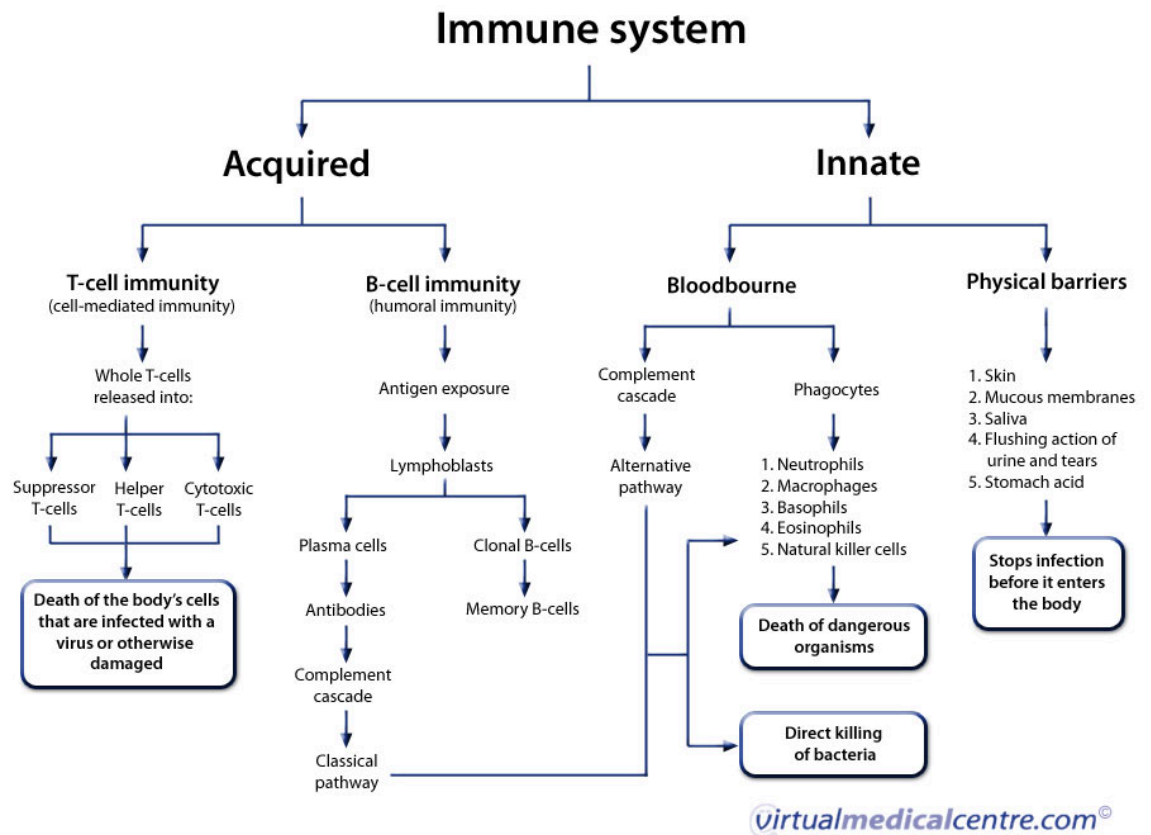
Helper T cells are activated by the antigen-presenting cells, they activate B cells and cytotoxic T cells to kill infected host cells. Cytotoxic T cells are known as killer cells, they kill cells by releasing chemicals (granzymes and perforins) which cause cell apoptosis (cell suicide)

- **Antigen Presenting Cells:** cells that present the antigen surface to other immune cells for them to elicit an immune response (allows other cells to recognize that there is an antigen which needs to be acted on)

### Main Immune system parts

- Lymphatic system- vessels and tissues protecting from infections (contains bone marrow- spongy substance in bones, thymus- mature and produce immune cells, lymph nodes- filtering substances which have been lured in or through lymphatic fluid (lymph vessels - carry lymph (clear/white fluid containing lymphocytes (immune cell in bone marrow) and white blood cells) through body to lymph nodes and back to veins containing all of the waste products and functioning similarly to blood vessels.
- Complement system- Helps and has the ability to clear pathogens from an organism by antibodies and phagocytic cells.
- phagocytic cells- immune cells that can ingest foreign materials and kill microorganisms as a result in boosting immune response. (its a type white blood cell)
- Spleen- Fist sized organ located on the upper left side of the abdomen which fights invading germs in blood and shares a similar function to the liver. A body can survive without it
- White blood cells- Part of the immune system used to defend the body from diseases and infections.
- Antibodies- definition above
- The **adaptive immune** system makes antibodies (b-cells make the antibodies) to fight certain germs that the body has previously interacted or came into contact with. This system is known as an “acquired” or “adaptive” response as it results in a specific immune response.
- The **innate immune** system provides a non-specific immune response which defends against harmful germs and substances. It fights using immune cells, cytotoxic cells “killer cells” and phagocytes “eating cells”. The main objective for

the innate immune system is to fight germs or harmful substances entering the body, usually entered through the skin or digestive system.



**T cells:** A type of white blood cells that kill unrecognized/infected cells.

**T-cell immunity :** Refers to viruses/diseases being killed by cytotoxic (killer) T-cells.

- **Suppressor T-cells :** reduce other t-cells' activity when required. Are not considered one of the main T-cell types.
- **Helper T-cells :** Recognize foreign substances in the body. Direct cytotoxic cells to kill the infected cells.
- **Cytotoxic T-cells :** Also known as killer T-cells. Kills off foreign cells, or infected/diseased cells.
- **B-cells :** White blood cells that create antibodies. Develop from bone marrow (stem cells).
- **B-cell immunity (Humoral immunity) :** The process of producing antigen-specific antibodies when antigens enter the body.
- **Lymphocyte :** Cells that defend the body from disease.

- **Lymphoblast** : Cell development. When a lymphocyte enlarges after being prompted by antigens.
- **Clonal B-cells** : Monoclonal B-cell lymphocytosis (MBL) - condition with unusual B cell (lymphocyte), clones consecutively.
- **Memory B-cells** : These cells keep memory of previously encountered antigens so they're easier to beat in the future.
- **Plasma Cells** : Immune cells that create certain antibodies.
- **Complement Cascade** : Compliments abilities of antibodies and phagocytic cells to remove pathogens from organisms.
- **Classical Pathway** : One of the activation pathways in the complement system.

**Q2: What are immunosuppressants?**

- Immunosuppressant is a class of medicines used to limit the amount of immune response given in the body. These drugs are used to prevent the body from unintentionally attacking healthy cells and tissues. By doing so, they treat certain autoimmune diseases and allow the body to be less likely to resist organ transplantation. By disabling certain parts of the immune system, immunosuppressants can decelerate the attack on healthy tissues and cells.

December 27, 2023  
Entry #9

**Completed to-do**

- Addressed 2 main questions (benefits and harms of immunosuppressants)

**Q3: What are some benefits of immunosuppressants and how do they help the human body?**

# AUTOIMMUNE DISEASES



- \* IMMUNE SYSTEM MISTAKENLY ATTACKS TISSUES & ORGANS
  - ↳ e.g. SYSTEMIC LUPUS ERYTHEMATOSUS
  - ↳ e.g. RHEUMATOID ARTHRITIS

- \* PERIODS of ILLNESS (FLARES)
- \* PERIODS of REMISSION



- \* CAN'T be CURED
- \* CAN be TREATED w/ SYSTEMIC IMMUNOSUPPRESSANT MEDICATIONS

## CAUSES

- \* AUTOIMMUNE DISEASE
  - ~ LUPUS
  - ~ RHEUMATOID ARTHRITIS
  - ~ TYPE 1 DIABETES
- \* INFECTIONS
  - ~ HIV → AIDS
  - ~ PNEUMONIA
- \* LYMPHOMA
- \* LEUKEMIA
- \* SICKLE CELL DISEASE
- \* IMMUNE CELL DEFICIENCY
- \* MEDICATIONS
  - ~ IMMUNOSUPPRESSANTS
  - ~ CHEMOTHERAPY



- Helps the immune system by combating cell damage, and inflammation, and reduces the risk of organ transplantation and autoimmune diseases.
- In the past, the main objective of immunosuppressant drugs was to help reduce



the risk of rejecting organ transplants which continues up

- Polyclonal antilymphocyte antibodies were the first successful medications used in organ transplantation in the 1970s. A decade later, monoclonal antibodies developed as a new class of immunosuppressants with immunosuppressive agents in transplantation to target immune cells specifically for acute rejection. Overall, monoclonal antibodies were able to act as a quick pace suppressant.
- For individuals who have an autoimmune disease, immunosuppressants can then inhibit the enzyme called calcineurin (which activates T cells), preventing the activation of T cells which stops the immune system from damaging healthy cells and inflammation
- Individuals who get a stem cell transplant due to having blood cancer start to build a new immune system (due to the new stem cells which produce blood cells), this new immune system is in a new body and believes the new body is foreign (considers it an antigen) and may start attacking the body, hence immunosuppressants are required to suppress the immune system
- In cases of organ transplants, your body is not familiar with the new organ and believes it is an antigen, hence an immunosuppressant may be needed so that your body does not attack the cells of the new organ

**Q4: What are some harms of immunosuppressants and how do they cause harm to the human body?**

**TABLE 97-3**

Side Effects of Long-Term Corticosteroid Use

System	Long-Term Side Effects
Cardiovascular	Sodium and fluid retention, hypertension, atherosclerosis
Gastroenterological	Gastritis, peptic ulcer, gastrointestinal bleeding, pancreatitis
Dermatological	Acne, increased bruising, impaired wound healing
Endocrine	Diabetes mellitus/glucose intolerance, cushingoid facies, hyperlipidemia, growth retardation, menstrual irregularities, hirsutism, weight gain—increased appetite, adrenal gland hormone suppression
Infectious	Increased risk for infections, including fungal
Musculoskeletal	Osteoporosis, vertebral and femoral fractures, osteonecrosis of femoral head; myopathy, muscle weakness
Ophthalmic	Cataracts, increased intraocular pressure, glaucoma, exophthalmos
Psychiatric	Psychosis, mood swings, depression, aggressive behavior, insomnia

- Immunosuppressants suppress the immune system, sometimes more than intended. With too much weakening, the body may not be able to protect itself from pathogens and infectious microorganisms. If this were to happen, the body would become vulnerable to other diseases, increasing the risk of viral, bacterial and fungal infections. Long-term toxicities associated with immunosuppressants (specifically Azathioprine) also include hematological deficiencies, GI disturbances, and hypersensitivity reactions.
- Another major risk of immunosuppressants is the development of skin cancer, which is developed through the body's inability to kill cancer cells. More than 50% of transplant patients develop skin cancer 20 years post-transplantation. Although immunosuppressants can offer lifesaving benefits, the side effects and health complications could potentially become life-threatening. Symptoms and side effects of this drug include birth defects, otitis media, sinusitis, bronchitis, pneumonia, diarrhea, meningitis and bacterial sepsis.

December 28, 2023  
Entry #10

**Completed to-do**

- Added to the cons of immunosuppressants (specifically the infections that can be caused)

**Bacterial Infections :** A type of infection releasing bacteria into the body by the multiplying of organisms or releasing toxins into the body.

- Sinusitis- Sinusitis is an infection occurring when the sinus tissues swell up. Bacterial organisms that are unfamiliar can cause this infection.
- Cellulitis - An infection affecting the skin and tissue, possibly leading to sepsis.
- UTI (urinary tract infection) - An infection caused by microbes entering. This infection could be in any part of the urinary system.

**Fungal Infections :** A type of infection which is caused by the production and living of different fungi species living in various parts of the human body which can be aggravated resulting in an infection

- Aspergillosis- A type of indoor and outdoor mold of which people breathe in there spores every day without usually getting affected unless they have a weakened immune system

**Viral Infections :** A type of infection that can be received through a virus. It contains an infectious organism which is smaller than fungi and bacteria that invades living cells to reproduce. These viruses use the human body cells for creating a negative impact.

- Hepatitis - Viruses attacking the liver resulting in the inflammation of the liver
- Pneumonia - An infection caused by the air sacs of one or both of the lungs filled with pus due to the viral, fungal or bacterial intruders attacking. Viruses may also infect the upper respiratory tract, agitating the breathing.
- Otitis media - An infection in the ear causing swelling, redness, and fluid buildup behind the eardrum.

January 5, 2024  
Entry #11

**Completed to-do**

- Addressed a subtopic down below
- Addressed expert opinion

**Types of immunosuppressants**

- Corticosteroids are the most common type of immunosuppressant, they are a type of anti-inflammatory drug.
- Calcineurin inhibitors: inhibit calcineurin, are proteins that prevent the activation of t cells, hence suppressing the immune system .

	<ul style="list-style-type: none"> <li>● Inosine monophosphate dehydrogenase (IMDH) inhibitors and Mechanistic target of rapamycin (mTOR) inhibitors: suppress cell growth and cell multiplication (ex. cancer).</li> <li>● Monoclonal antibodies: are used in cases of organ transplants.</li> <li>● Janus kinase inhibitors: prevent the activation of certain enzymes which reduce inflammation caused by the immune system.</li> </ul> <p><b>Q5: Professional opinion on immunosuppressants</b>  <a href="https://med.stanford.edu/news/all-news/2021/11/immunosuppressants-linked-to-adverse-reactions.html">https://med.stanford.edu/news/all-news/2021/11/immunosuppressants-linked-to-adverse-reactions.html</a></p> <ul style="list-style-type: none"> <li>● Note: A study done by the Stanford University highlighted some of the key risks associated with immunosuppressants, they identified a genetic profile present in about 20% of the population that may cause fatal reactions to immunosuppressants</li> <li>● These risks included severe reactions such as life threatening lung problems, liver dysfunction, and cytokine storm</li> <li>● According to the researchers at Stanford University, it is important to raise public awareness regarding the risks and usage of immunosuppressants in order to prevent severe negative reactions due to them</li> <li>● The researchers advocate for prescreening of patients prior to being prescribed for immunosuppressants</li> </ul>
<p>January 7, 2024 Entry #12</p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>● Set up “Basic Information” in the CYSF Platform and joined our accounts.</li> <li>● Completed “Ethics and Due Care” to get it approved.</li> </ul>
<p>January 12, 2024 Entry #13</p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>● Watched a video <a href="https://www.youtube.com/watch?v=l3UqS1N4pFI">https://www.youtube.com/watch?v=l3UqS1N4pFI</a></li> </ul>
<p>January 20, 2024 Entry #15</p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>● Addressed a research question</li> </ul> <p><b>Q6: When and Where were immunosuppressants discovered?</b></p> <ul style="list-style-type: none"> <li>● The discovery of immunosuppressants dates back to the 1960s by the</li> </ul>

experiments of Sir Roy Calne. However, the most common immunosuppressant, Cyclosporine, had been discovered in 1972 in the lab of Sandoz in Switzerland. By 1983 it gained more recognition as a higher-ranking immunosuppressive drug.

January 23, 2024  
Entry #16

**Completed to-do**

- Addressed a research question

**Q7: How do immunosuppressants work?**

- Essentially, Immunosuppressants work by suppressing the immune system and decreasing its reaction to the body. However, it is a case-to-case matter and based on different bodies, the symptoms and effects will vary. These effects are usually negative as people rely so much on this drug that they are unable to discontinue it since it is the only way they keep their immune system intact.
- They do this by blocking the activity of T cells (the killer cells) which attack pathogens and kill pathogens in the body.
- Calcineurin is an enzyme that activates the T cells and causes them to start attacking the disease-causing cells, immunosuppressants prevent this enzyme from being released, hence, the T cells cannot be activated and the immune response is suppressed
- Calcineurin- enzyme playing a role in t cell mediated immune response (it prevents harmful or unfavourable pathogens to grow and suppresses the immune system)

January 26, 2024  
Entry #18

**Completed to-do**

- Addressed a subtopic- down below

**The need for immunosuppressants**

- Immunosuppressants are used for patients with autoimmune diseases, cell damage, and inflammation as well as to perform organ transplantations. Patients with conditions such as Inflammatory Bowel Disease, Lupus, and Rheumatoid arthritis (RA), may need immunosuppressants. Organ transplantations such as bone marrow, lung or heart transplantations also require immunosuppressants. With conditions like these, the drug may be used to increase the healthy being of the body.

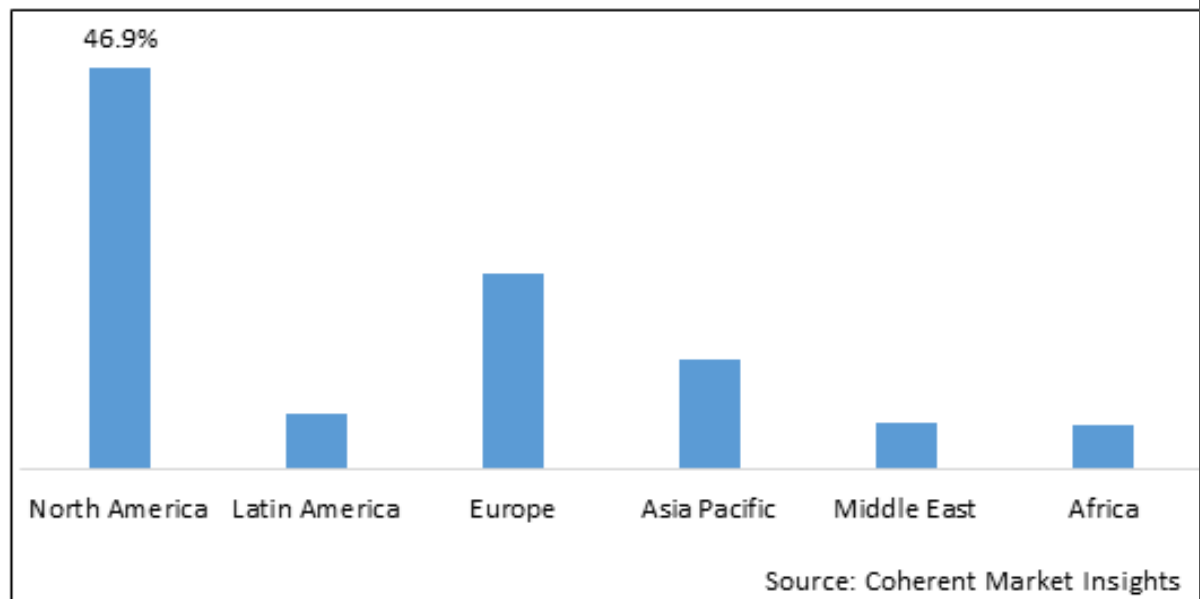
- |  |   |
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|  | <ul style="list-style-type: none"><li>● Immunosuppressive therapy is a therapy that requires prescribed immunosuppressant drugs to treat conditions (autoimmune diseases, post-organ transplantation, inflammation, etc). This treatment is used to lower the activity of the body's immune system. This treatment may be used to prevent the rejection of an organ, as well as disease protection. .</li></ul> |
|--|---|

January 27, 2024  
Entry #19

**Completed to-do**

- Found graph and addressed data
- The graph below represents the statistics of the global Organ Transplant Immunosuppressant Drugs Market Share(%) from 2023 to 2030. North America is predicted to hold a greater position in the global organ transplant immunosuppressant drugs market by 2030. This forecast period can resemble the future healthcare of North America as it is not only an investment for ill patients but it will also increase its production and distribution activity among pharmaceutical companies and biotech firms. Companies such as Sanofi in September 2021 invested in safer drugs and merged with RezurockTM to expand their core General Medicines assets. COVID-19 can also be another reason for the demand for immunosuppressant drugs. As the population of COVID-19 patients increased, they put medical procedures on hold for transplant patients. This resulted in a 16% decrease in transplant procedures in 2020 which soon became a great demand once the pandemic was on the border and controlled.

**Global Organ Transplant Immunosuppressant Drugs Market Share (%)**  
**2023-2030**



X axis: Continents  
Y axis: Rate of Market Share(%)

January 30, 2024  
Entry #20

**Completed to-do**

- Created a conclusion

**Conclusion**

- In response to our question; “What are the effects of immunosuppressants on the human body and how can they benefit or harm our immune system,” immunosuppressants can cause both negative and positive effects on the body. The two subsystems in the immune system, the innate and adaptive, work together when a virus/disease enters the body and an immune response is triggered. When this occurs, the body may experience harmful or beneficial symptoms. Immunosuppressants may be required with certain health implications including autoimmune diseases and transplantations. Doctors also say that these medications should be used with caution, research and correct dosage. Otherwise, results may include a decrease in health, and even fatal conditions. Therefore, while immunosuppressants can be beneficial, they can also weaken the immune system if they are relied on frequently, causing additional risks.

February 2, 2024  
Entry #21

**Completed to-do**

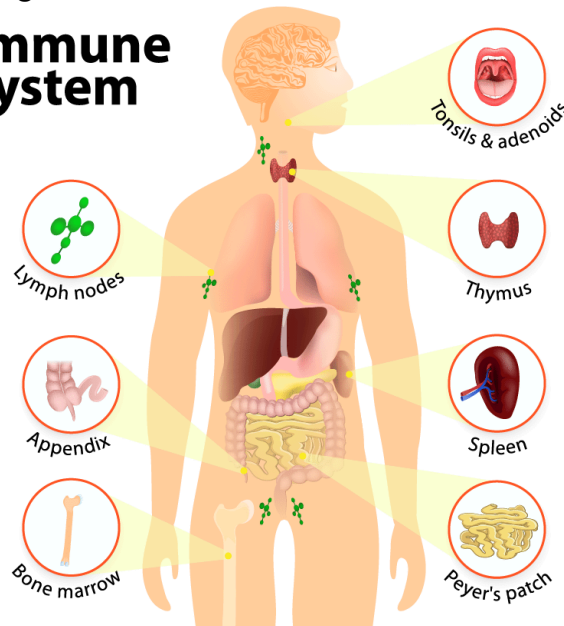
- Add to general side effects of immunosuppressants - (cons)

February 4, 2024  
Entry #22

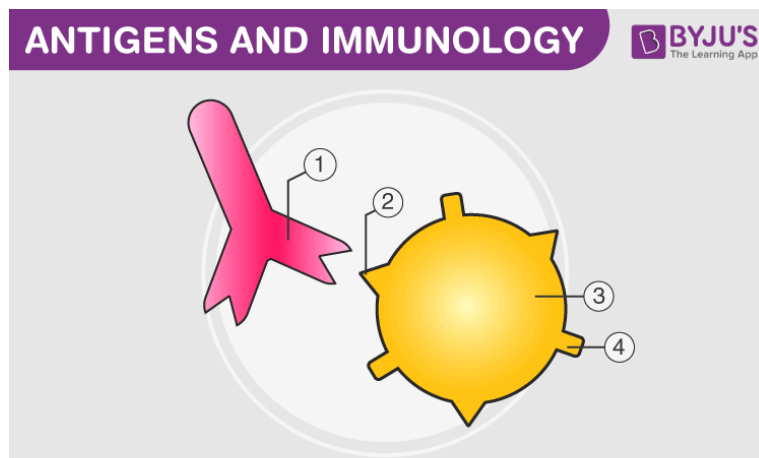
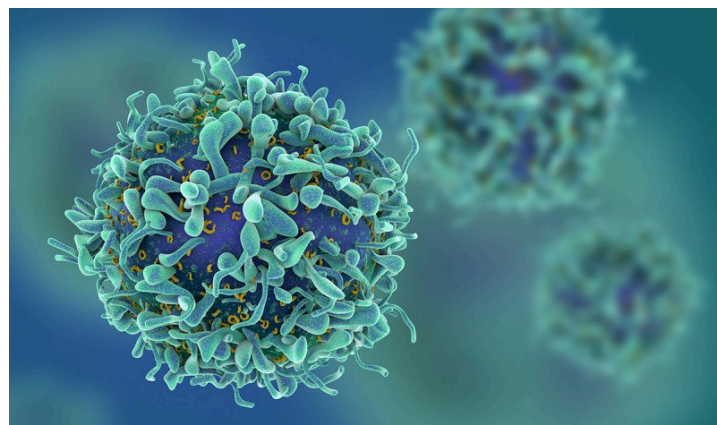
**Completed to-do**

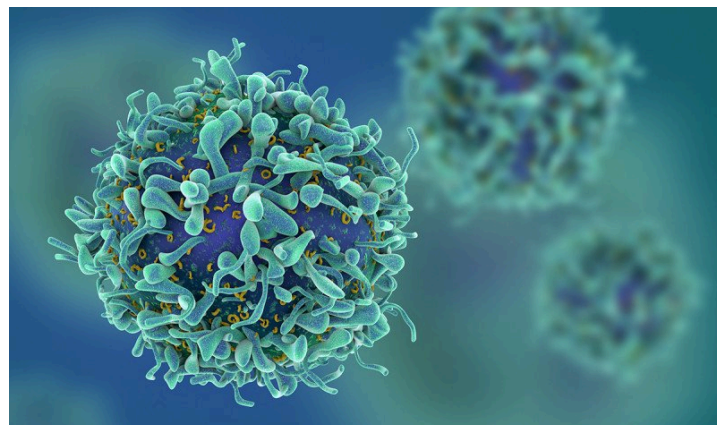
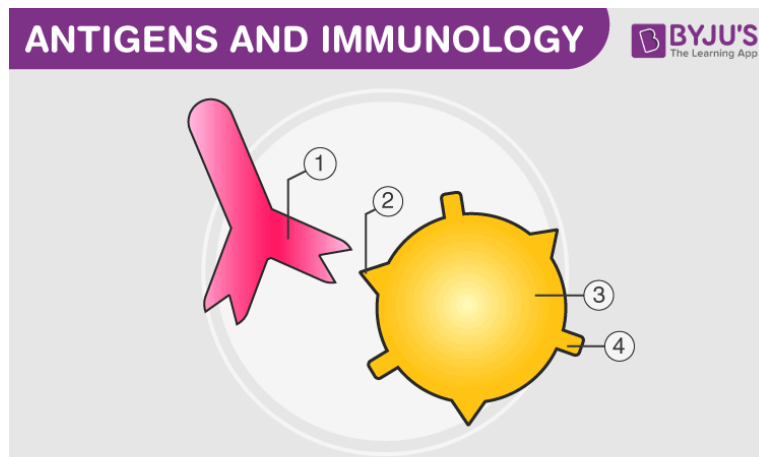
- Images to use for trifold

**Immune system**







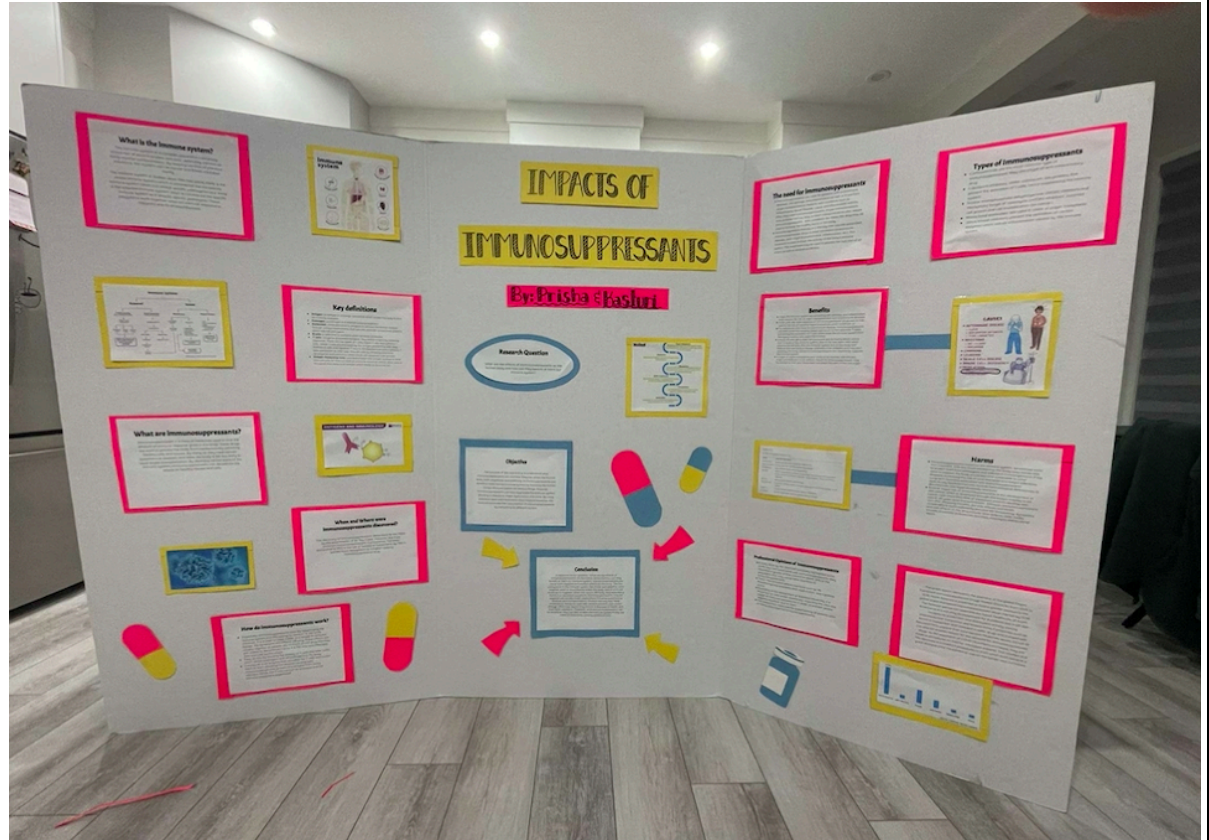
	 
<p>February 6, 2024 <b>Entry #23</b></p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>● Spell checking and reorganizing log book</li> </ul>
<p>February 7, 2024 <b>Entry #24</b></p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>● Attended school science fair meeting</li> <li>● Tips and information by Ms Bretner: February 23 (Friday) is the in school science fair, keep trifold minimal and go through Judging sheet</li> </ul>
<p>February 15, 2024 <b>Entry #25</b></p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>● Began to make presentation slides</li> <li>● Halfway done</li> </ul>
<p>February 16, 2024 <b>Entry #26</b></p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>● Completed slides and printed</li> </ul>
<p>February 17, 2024 <b>Entry #27</b></p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>● Formatted sources into APA style</li> </ul>
<p>February 20, 2024 <b>Entry #28</b></p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>● Printed and cut slides</li> </ul>

- Made aesthetic elements and designs

February 21, 2024  
Entry #29

**Completed to-do**

- Brought trifold home
- Completed the trifold
- Created a speech
- Self evaluation (using judges sheet and rubric)



February 22, 2024  
Entry #30

**Completed to-do**

- Double checked log book
- Printed log book
- Practiced presentation

February 23, 2024  
Entry #31

**Completed to-do**

- Selected for CYSF!

**Completed to-do**

- Uploaded research and documents onto the CYSF platform
- Met Ms. Bretner at school to receive feedback for project (adjustments to visual presentation and adding numbered sources to each slide of research)

	<ul style="list-style-type: none"> <li>● Attended an in school CYSF meeting (regarding the deadlines)</li> </ul>
<p>February 28, 2024 <b>Entry #32</b></p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>● Uploaded research and documents onto the CYSF platform</li> <li>● Met Ms. Bretner at school to receive feedback for project (adjustments to visual presentation and adding numbered sources to each slide of research)</li> <li>● Attended an in school CYSF meeting (regarding the deadlines)</li> </ul>
<p>March 11-14, 2024 <b>Entry #33-36</b></p>	<p><b>Completed to-do</b></p> <ul style="list-style-type: none"> <li>● Attended CYSF meeting to receive in school judging rubrics</li> <li>● 86% Average (82%, 82%, 93%)</li> <li>● Made notes on improvements (organization, in depth understanding, clarity in visual presentation and more)</li> </ul>