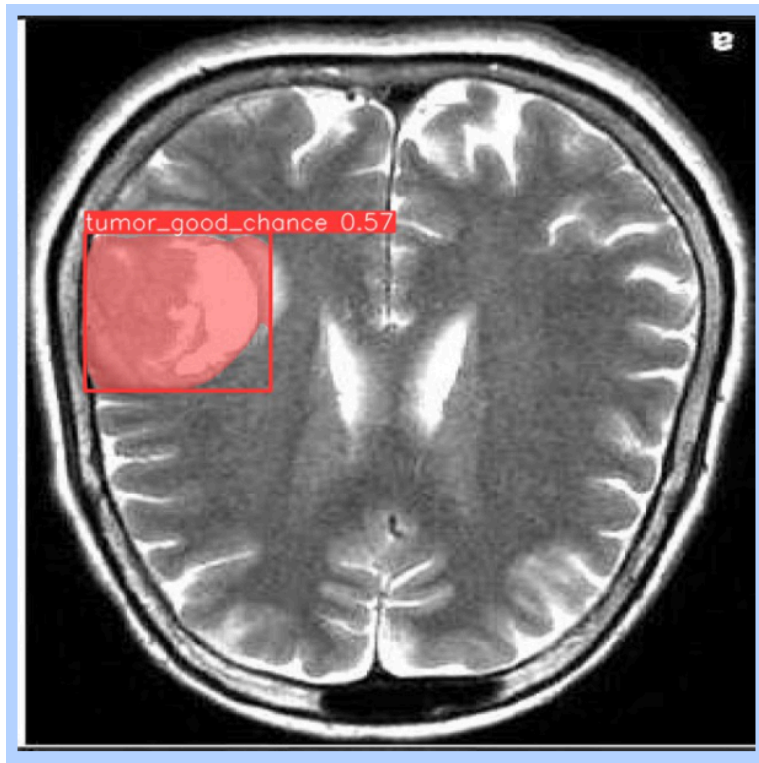


User Guide for Brain Tumor Prediction Tool





Disclaimer:

This was not created by medical professionals and is not intended to be used in place of medical practices. This is merely a tool to help researchers, patients, and doctors see how computer vision could be used for brain tumor detection and to provide resources on brain tumors.

Step 1:

Clone the project repo:

git clone https://github.com/tchiang0/data_515_brain_tumor_computer_vision.git

Step 2:

Install pip if not already installed:

```
python -m pip install
```

Step 3:

Run requirements.txt to ensure all dependencies exist :

```
pip install -r requirements.txt
```

Step 4:

Navigate into the the data_515_brain_tumor_computer_vision project directory and then in to data_515_brain_tumor_computer_vision folder:

```
cd data_515_brain_tumor_computer_vision/data_515_brain_tumor_computer_vision
```

```
(base) holde@EllieLaptop:/mnt/c/Users/holde/Documents/Data_515$ cd data_515_brain_tumor_computer_vision/data_515_brain_tumor_computer_vision
```

Step 5:

Run the following command from inside the data_515_brain_tumor_computer_vision folder to launch the tool:

```
python -m streamlit run ui_demo/Brain_Tumor_Information.py
```

Click the URL that pops up to launch the tool site in your browser:

```
(base) holde@EllieLaptop:/mnt/c/Users/holde/Documents/Data_515/data_515_brain_tumor_computer_vision/data_515_brain_tumor_computer_vision$ python -m streamlit run ui_demo/Brain_Tumor_Information.py

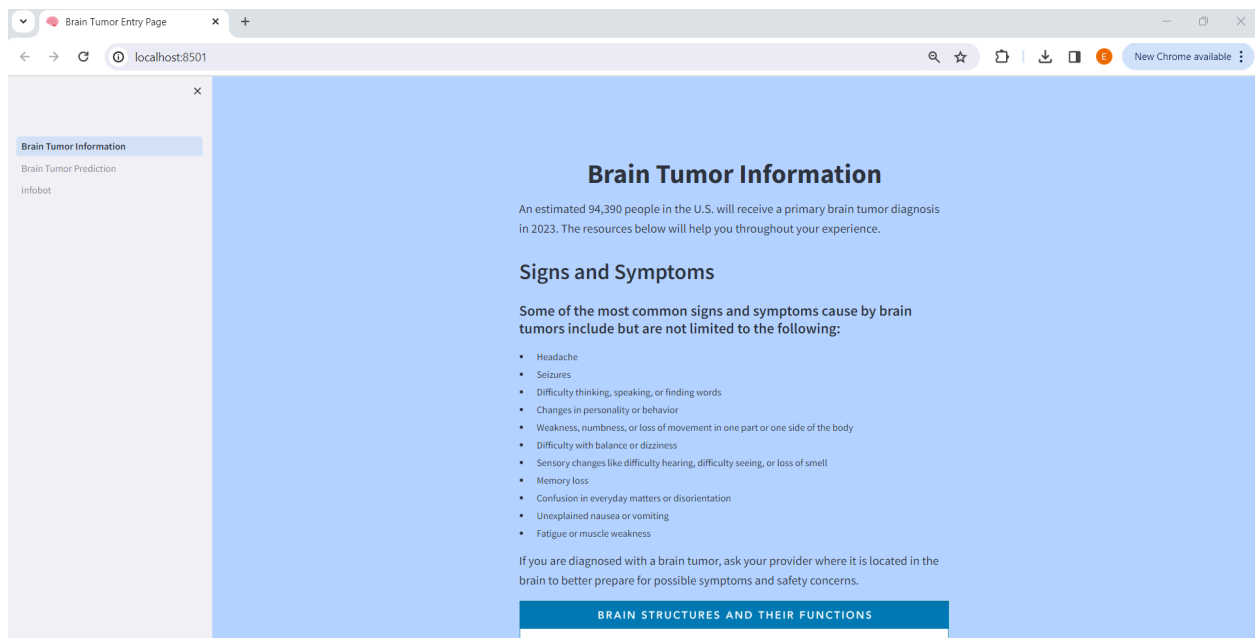
You can now view your Streamlit app in your browser.

Local URL: http://localhost:8501
Network URL: http://172.21.38.196:8501

gio: http://localhost:8501: Operation not supported
```

Step 6:

You should now be at the landing page of our tool site. This page will give you background information on brain tumors. At the bottom of the page you will find links to additional information.

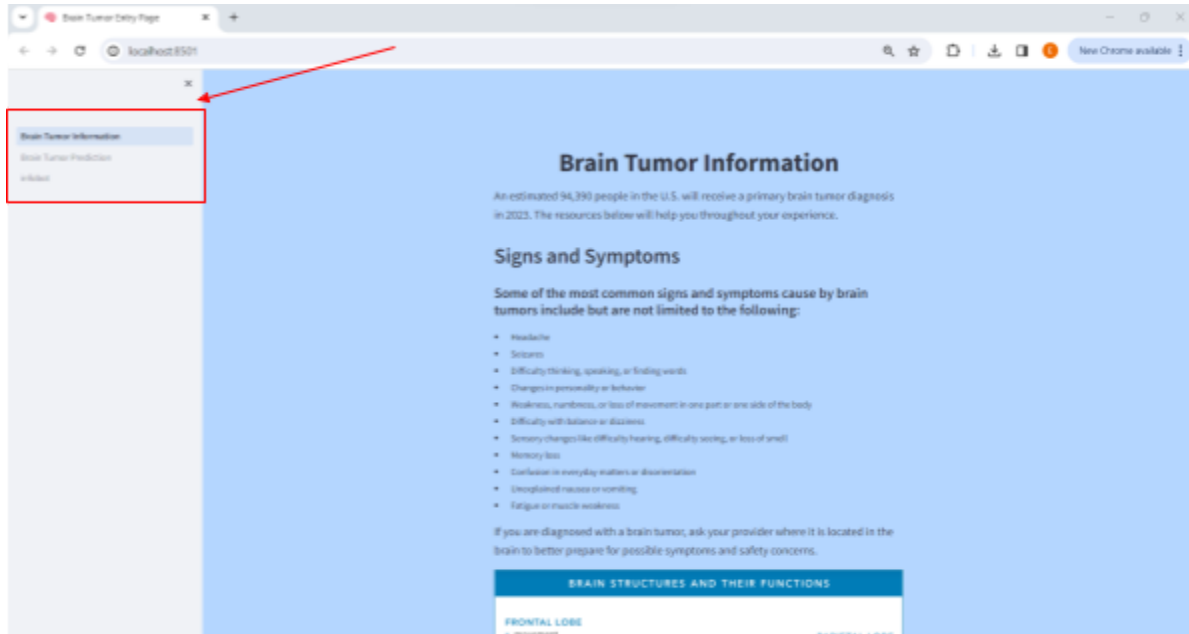


On the right hand side you will see a navigation column where you can click the name of the page you wish to navigate to.

Brain Tumor Information: Background information on brain tumors and links to additional resources

Brain Tumor Prediction: Our brain tumor prediction tool that reads in an image of the brain from a CT scan and returns the predicted probability of a brain tumor.

infobot: This is an interactive way to navigate the website and learn more about brain tumor resources.




Step 7:

Click the “Brain Tumor Prediction” tab in the navigation column to navigate to the Brain Tumor Prediction tool. Use the image uploader to select an image of the brain from a CT scan from your computer by clicking “Browse files”. The image must be in the format '.jpg', '.jpeg', '.png', '.tiff', '.tif'.


Additionally, in the “examples: directory of the project there is a folder named “example_brain_scans” with 5 sample brain scans for users to test the tool with.

Brain Tumor Information


 **Important Reminder: Medical Prediction Tool**

Dear Users,

Our Brain Tumor Prediction tool offers suggestions based on input data. It is not a substitute for professional medical advice.

 **Seek Professional Help:**

For related health concerns, consult a licensed healthcare provider. They can provide accurate, personalized advice based on your specific situation.


 **Use Responsibly:**

Our tool supports, but doesn't replace professional care. Don't delay seeking medical advice based solely on tool suggestions.

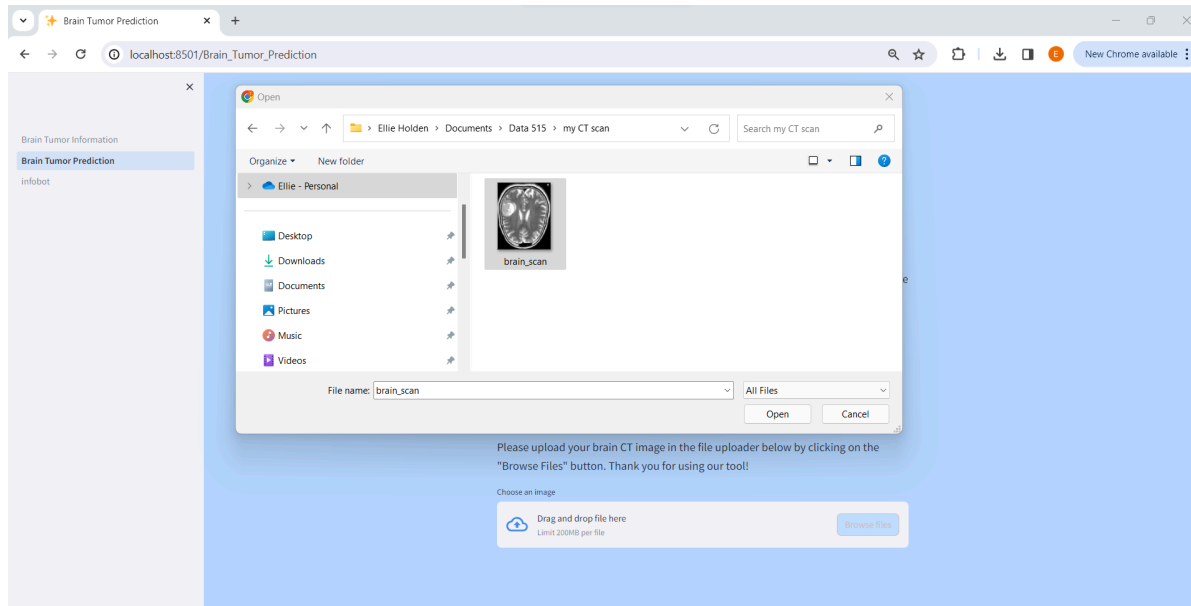
Your health matters most. Use our tool as a guide, not a diagnosis.

Please upload your brain CT image in the file uploader below by clicking on the "Browse Files" button. Thank you for using our tool!

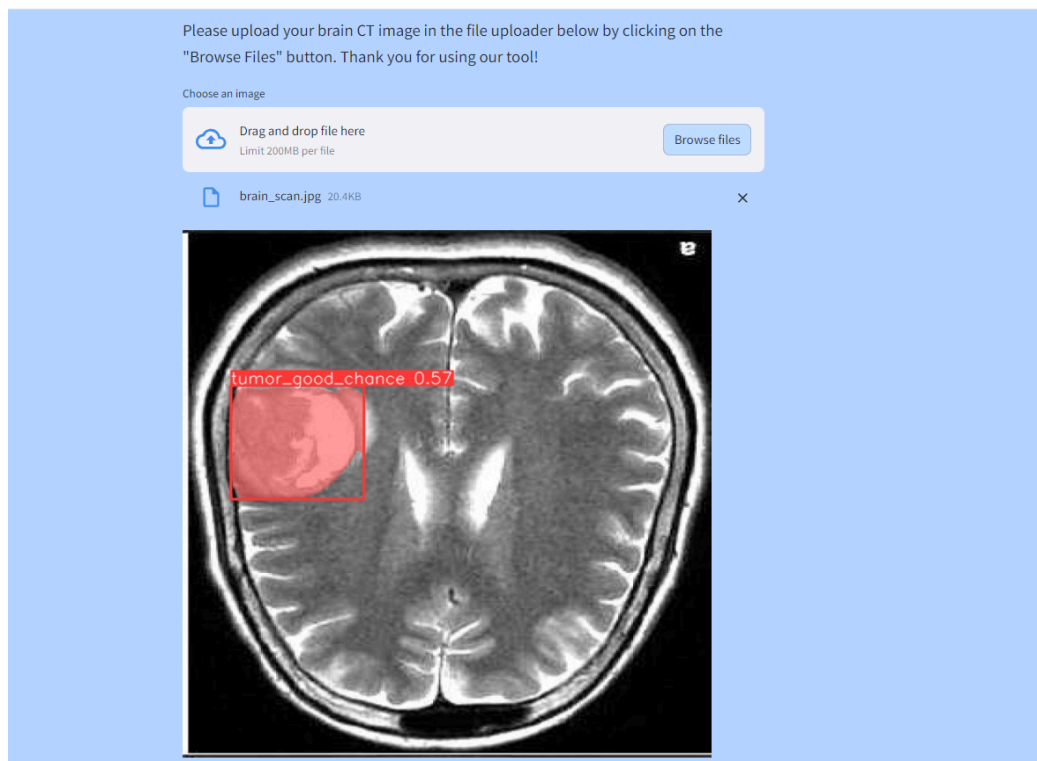
Choose an image

 Drag and drop file here
Limit 200MB per file

Browse files

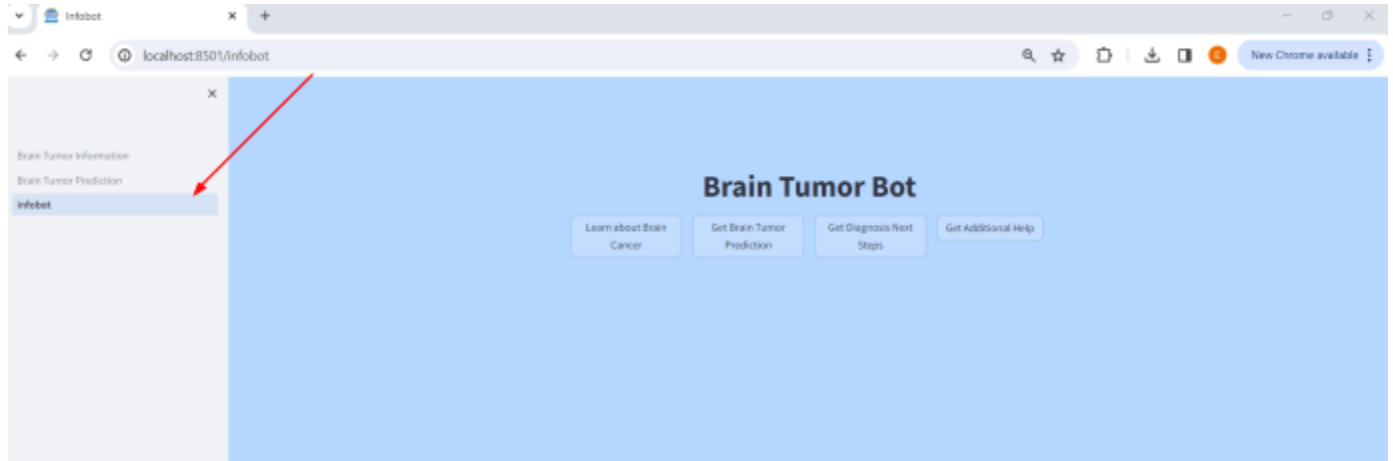


Once uploaded, the tool will return your scanned image with a label of the predicted probability of tumor and the area of the tumor highlighted.



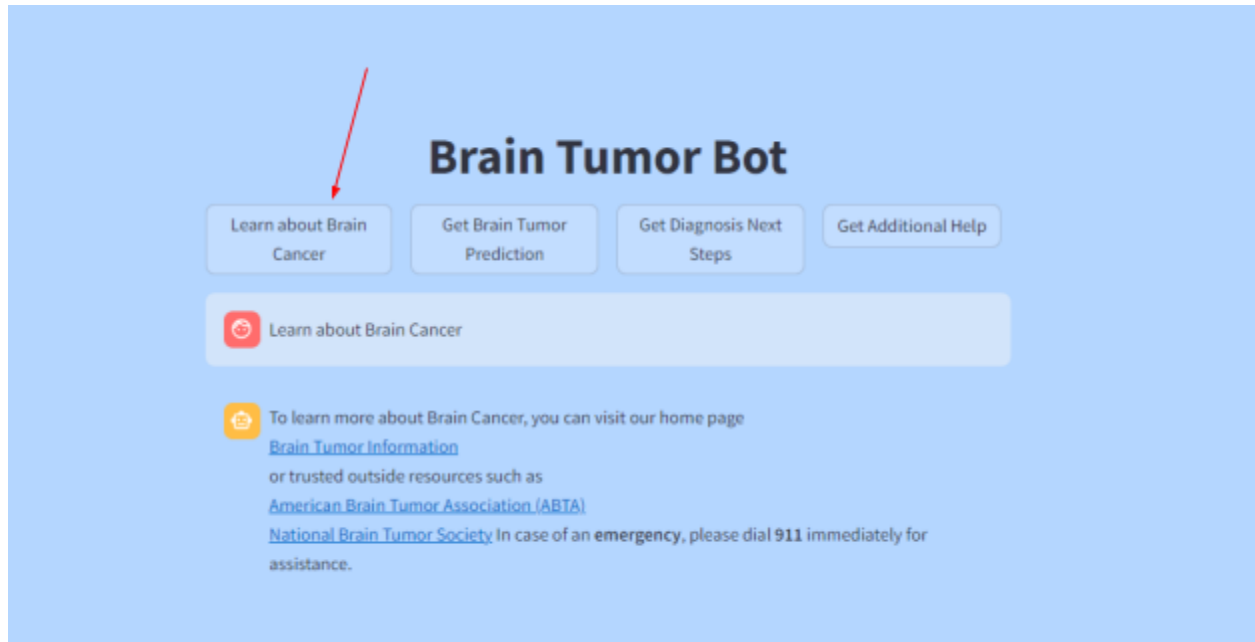
Step 8:

Click the “infobot” tab in the navigation column to navigate to the infobot page. This page allows you to navigate the tool site in an interactive way.

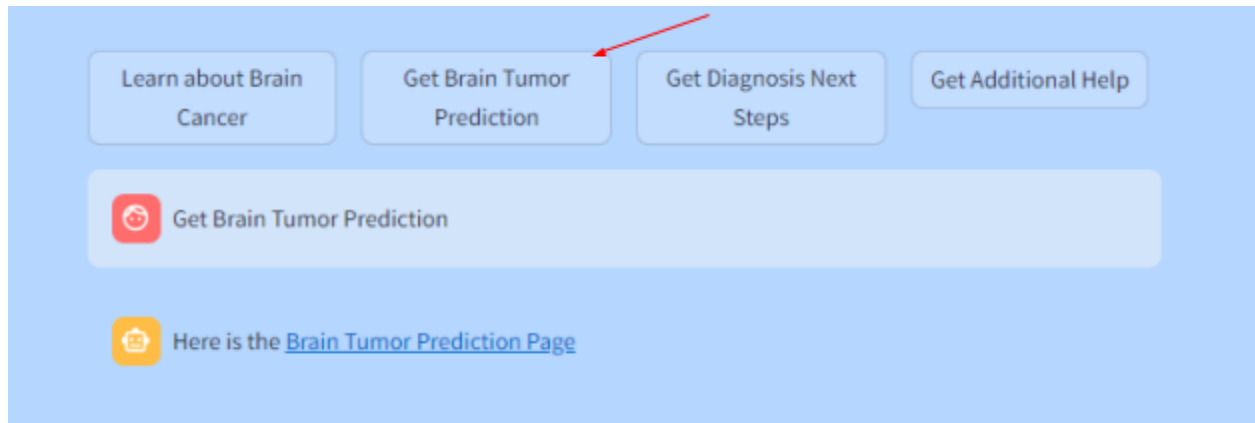


There are 4 buttons that you can click to explore the website.

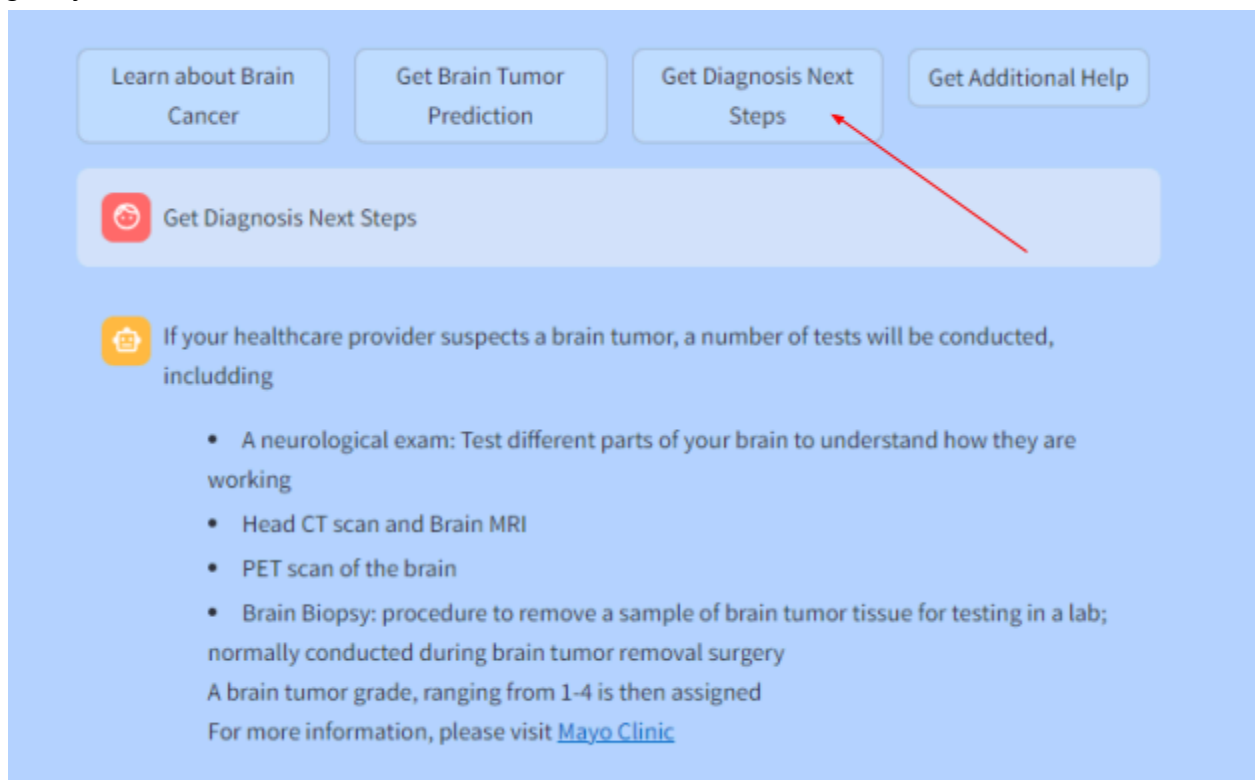
To learn more about brain cancer click “Learn about Brain Cancer”. This will provide you a link to the Brain Tumor Information (landing page) and provide other resources.



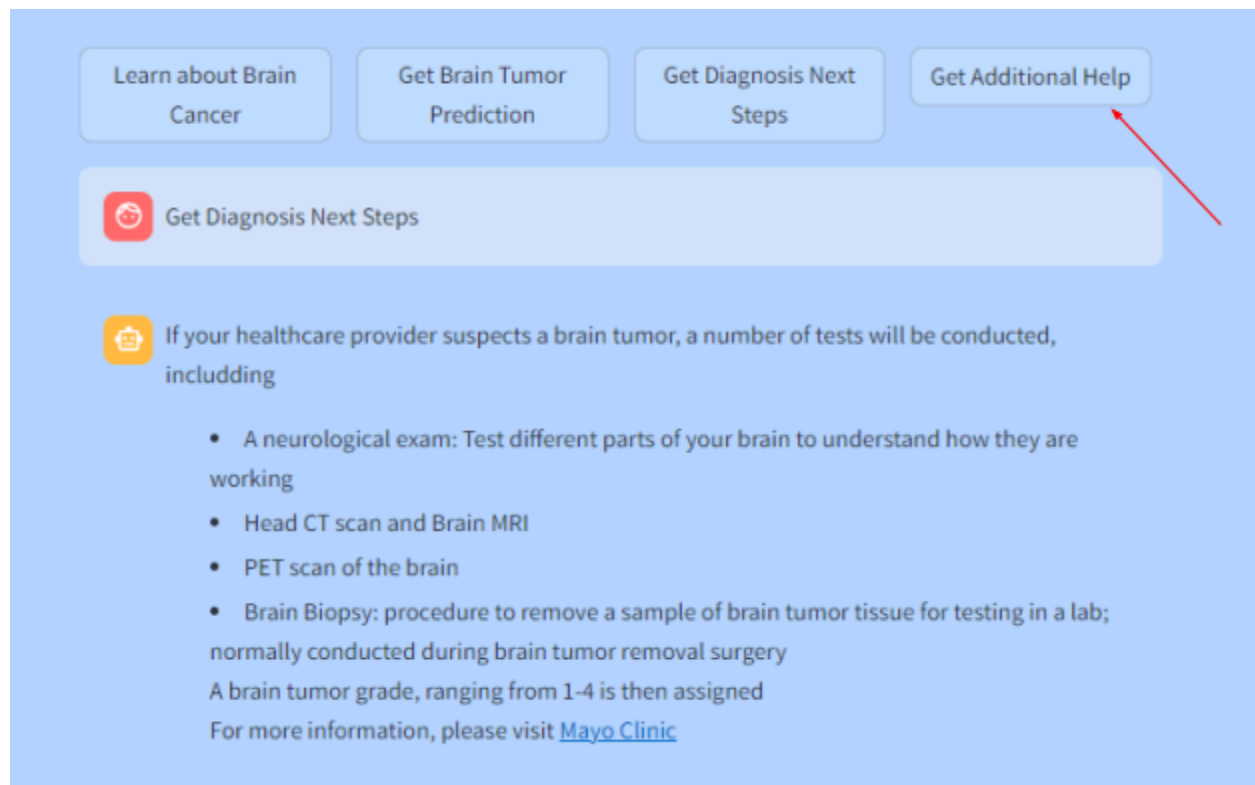
To use the brain tumor prediction tool click “Get Brain Tumor Prediction”. This will provide you a link to the “Brain Tumor Prediction” page.



To learn more about diagnosis next steps for someone who was recently diagnosed with a brain tumor or believes they may have one click “Get Diagnosis Next Steps”. This will give you information.



For any additional help click “Get Additional Help” to be provided with additional resources.



The screenshot shows a light blue background with four white buttons at the top: "Learn about Brain Cancer", "Get Brain Tumor Prediction", "Get Diagnosis Next Steps", and "Get Additional Help". A red arrow points to the "Get Additional Help" button. Below the buttons is a white bar with a red robot icon and the text "Get Diagnosis Next Steps". Underneath is a white box with an orange robot icon and the text "If your healthcare provider suspects a brain tumor, a number of tests will be conducted, including". This is followed by a bulleted list of tests: "A neurological exam: Test different parts of your brain to understand how they are working", "Head CT scan and Brain MRI", "PET scan of the brain", and "Brain Biopsy: procedure to remove a sample of brain tumor tissue for testing in a lab; normally conducted during brain tumor removal surgery". Below the list, it says "A brain tumor grade, ranging from 1-4 is then assigned" and "For more information, please visit [Mayo Clinic](#)".

Learn about Brain Cancer Get Brain Tumor Prediction Get Diagnosis Next Steps Get Additional Help

Get Diagnosis Next Steps

If your healthcare provider suspects a brain tumor, a number of tests will be conducted, including

- A neurological exam: Test different parts of your brain to understand how they are working
- Head CT scan and Brain MRI
- PET scan of the brain
- Brain Biopsy: procedure to remove a sample of brain tumor tissue for testing in a lab; normally conducted during brain tumor removal surgery

A brain tumor grade, ranging from 1-4 is then assigned

For more information, please visit [Mayo Clinic](#)