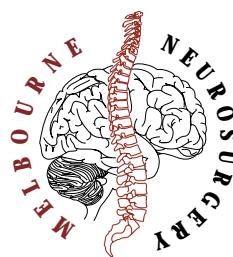


# MELBOURNE NEUROSURGERY

## PROCEDURE INFORMATION

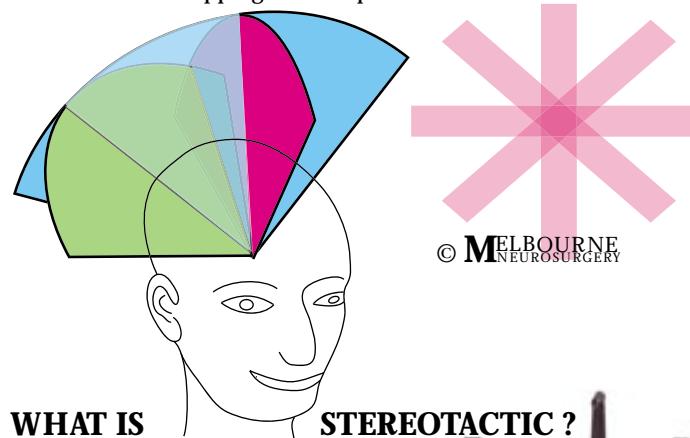
### STEREOTACTIC RADIOSURGERY



[www.neurosurgery.com.au](http://www.neurosurgery.com.au)

#### WHAT IS RADIOSURGERY ?

RADIOSURGERY is single treatment of high dose x - ray therapy that destroys a small abnormal area in the centre of the brain. It works by using overlapping moving pencil beams of radiation to produce a high dose at the point of treatment with very low dose around this. This can be likened to over - lapping coats of paint.



#### WHAT IS STEREOTACTIC ?

This is where we attach a frame to the head so that with the aid of special imaging we can with pin point accuracy locate the exact position and size of the abnormal area in the brain.



#### WHAT CAN THIS BE USED FOR ?

##### VASCULAR MALFORMATIONS

Arterio - Venous malformations

##### TRIGEMINAL NEURALGIA

##### TUMOURS IN THE BRAIN

Secondary tumours

Meningiomas

Acoustic Neuromas

Pituitary Tumours

Gliomas (primary brain tumours)

#### HOW LONG WILL YOU BE IN HOSPITAL ?

The procedure is done as a day case. It is always done at Peter MacCallum Cancer Institute in East Melbourne . You will be admitted at about 8.00 am. You will be discharged at about 4.30 pm. We will need any X - rays that you have.

#### HOW IS IT PERFORMED ?



Under local anaesthesia we attach a lightweight metal frame to your head. The local stings initially when injected into the scalp. After the scalp goes numb the frame is then screwed into the skull with four metal pins. This causes a headache which settles in 5-10 minutes.



We then check the position of the frame before we do the test to localise the lesion. A clear dome is temporarily fitted to do this. This is repeated during the day and is to check that the frame does not move while you are waiting to have the treatment and we are working out the specifics of your treatment.

You will then have the test to localise the lesion. This may be an angiogram for a vascular lesion or a CAT scan if it is a tumour. Sometimes for a vascular lesion we will use the CAT scan and your MRI scan to work out the specifics of the treatment.

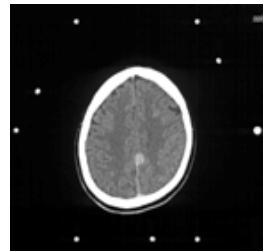


You will be given intravenous contrast prior to the CAT scan. The frame is bolted to the CAT scan table so that the images are accurate. Prior to doing the scan we check the position of the frame again with the clear dome and the gold depth gauge.

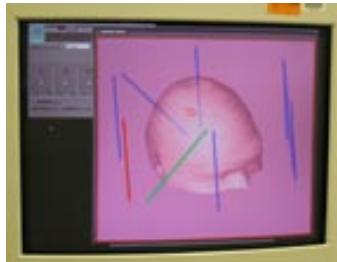
After the scan you will have to wait while we plan the treatment. This will take a few hours. You will be able to eat and drink while waiting.

## WHAT ARE WE DOING ?

The information from the CAT scan is sent to our computer. We then produce a picture that shows us where the lesion is in the brain relative to the scalp and the frame you are wearing. The dots around the CAT scan image are used to locate the lesion.



We then decide on the direction that we are going to bring in the X - rays so that we avoid all the important parts of the brain. The computer will help locate these inside the head.



When the planning is finished we will take you to the room where the treatment occurs.

## WHAT HAPPENS NEXT ?



The frame is fixed to the treatment table so that your head cannot move. This is because we want the accuracy of the treatment down to the millimeter. The frame position is again checked with the clear dome to make sure it has not moved. The treatment then occurs with the machine moving slowly around you. You will be repositioned for each beam(often 3 or 4). The total treatment time is about 45 min. When finished we take the frame off and you can go home. The places where the pins go into the head are dressed with Iodine antiseptic.

It is important to have some-one to take you home.

## WHAT HAPPENS WHEN YOU GO HOME ?

Your steroids dose should be reducing slowly  
You will be reviewed at 4 - 6 weeks post operatively.  
You should not have any problems but sometimes a weakness may develop. You need to tell us of this.  
You will usually have follow up imaging by your doctor.

## WHAT ARE THE RISKS?

**Discuss these and others with your surgeon as they relate specifically to the lesion treated**

Stroke  
Seizure  
Incomplete response to the radiation.  
Infection at pin site

## WHAT YOU SHOULD NOTIFY YOUR DOCTOR OF AFTER RADIO-SURGERY

Increasing Headache  
Fitting  
Weakness or numbness  
Drowsiness

## HOW LONG WILL IT TAKE FOR THE LESION TO RESPOND ?

It depends on the type of lesion. If it is a cerebral metastasis we expect it to stop growing or shrink within the next few months. Whole brain radiotherapy is sometimes used as well if there are multiple cerebral metastases. If it is an arterio-venous malformation then it can take up to two years to respond depending on its size.

## WILL YOUR SYMPTOMS GET BETTER ?

This depends on the type of lesion and the treatment given, you should ask about this.

YOU WILL BE ASKED TO SIGN A CONSENT FORM TO SAY THAT YOU UNDERSTAND THE RISKS . IF YOU ARE NOT SURE ASK BEFORE YOU SIGN.

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