Preconception Considerations in Neurosurgery In neurosurgery, **preconception care** is critical for women with pre-existing neurological conditions or those who have undergone neurosurgical procedures. The goal is to optimize maternal and fetal outcomes by managing neurological conditions before pregnancy.

Key Preconception Considerations in Neurosurgery:

1. **Epilepsy and Seizure Disorders**

1. Ensure seizure control before pregnancy.
2. Adjust **antiepileptic drugs (AEDs)** to minimize teratogenic risks (e.g., valproate is associated with neural tube defects).
3. Monitor drug levels, as pregnancy can alter AED metabolism.
4. Consider folic acid supplementation (≥4 mg/day) due to increased risk of neural tube defects.

2. **Hydrocephalus and Shunted Patients**

1. Evaluate **ventriculoperitoneal (VP) shunts** for functionality before pregnancy.
2. Be aware that increased intra-abdominal pressure during pregnancy may affect shunt function.
3. Consider alternative CSF diversion strategies if necessary.

3. **Brain and Spinal Tumors**

1. Assess tumor status and potential pregnancy-related growth stimulation (e.g., **meningiomas** can grow due to hormonal influence).
2. Delay pregnancy if surgical intervention or adjuvant therapy (radiotherapy, chemotherapy) is needed.
3. Consider MRI monitoring during pregnancy (preferably without contrast).

4. **Spinal Disorders and Previous Spinal Surgery**

1. Women with prior spinal fusions or instrumentation should be evaluated for potential **pelvic and lumbar spine stress** during pregnancy.
2. Assess risks for worsening spinal stenosis or herniation due to increased lumbar lordosis.
3. Consult anesthesia for **epidural feasibility** if prior spinal surgery exists.

5. **Stroke and Cerebrovascular Conditions**

1. **Arteriovenous malformations (AVMs)** and **intracranial aneurysms** require preconception risk assessment due to increased rupture risk during pregnancy.
2. **Carotid or vertebral artery dissections** require control of hypertension and anticoagulation planning.
3. Pregnancy-related **hypercoagulability** increases stroke risk in certain conditions.

6. **Chiari Malformation and Syringomyelia**

1. Evaluate for worsening symptoms (headache, myelopathy) with increased **intracranial pressure (ICP)** due to pregnancy-related fluid shifts.
2. Discuss **vaginal vs. cesarean delivery** based on neurological status.

7. **Multiple Sclerosis and Neuroimmunological Disorders**

1. Consider disease-modifying therapy (DMT) adjustments, as some are teratogenic.

2. Pregnancy often reduces MS relapse rates, but postpartum relapse risk increases.
3. Evaluate neurosurgical implications if there is severe disability.

8. **Neurosurgical Medications and Pregnancy**

1. **Avoid teratogenic drugs** such as valproate, methotrexate, and certain immunosuppressants.
2. Adjust corticosteroid use if needed for neurological inflammation.
3. Consider thromboprophylaxis in patients at high risk of **venous thromboembolism (VTE)** due to immobilization.

Conclusion Women with neurological conditions planning pregnancy should undergo **preconception counseling with a multidisciplinary team**, including **a neurosurgeon, neurologist, obstetrician, and anesthesiologist**. Optimizing neurological health before conception improves both maternal and fetal outcomes.

Let me know if you need a more detailed focus on a specific condition!