

# Neural Tube Defect- Spina Bifida

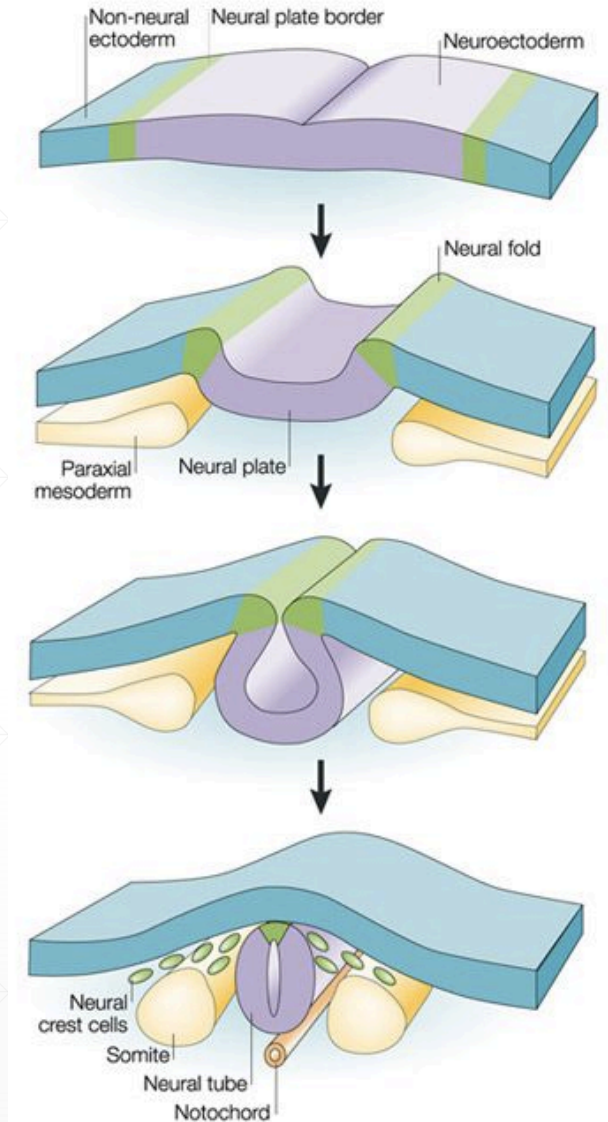
By: Rui Wen Li

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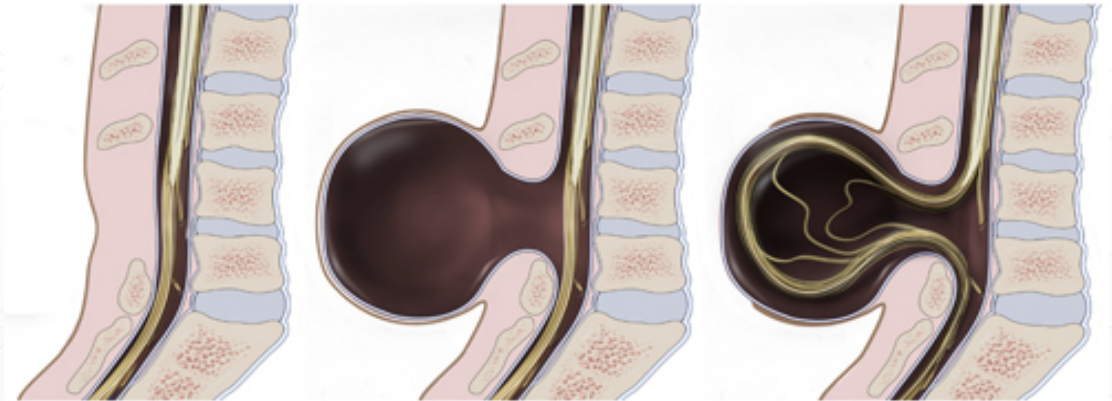
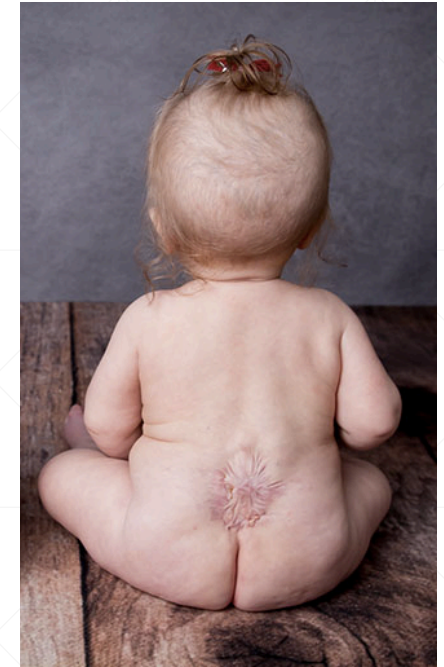
# Neural Tube

The neural tube is formed during the 3rd week by neural folds undergoing fusion at the most superior part. It is responsible for forming the spinal cord and neural tissue of CNS



# What happens if the Neural Tube is defected?

- **Spina Bifida**- is caused by the failure of fusion of neural tubes, which result in tube defects of tissue overlying the spinal cord, with defects in vertebral arches and various degrees of disability
- **Three types of Spina Bifida**
- **Spina bifida occulta**- mildest, no symptoms
- **Meningocele**- there is usually little to no nerve damage
- **Myelomeningocele** causes more severe disabilities, spinal cord is not formed properly, nerves and tissues are exposed



Spina bifida occulta

Meningocele

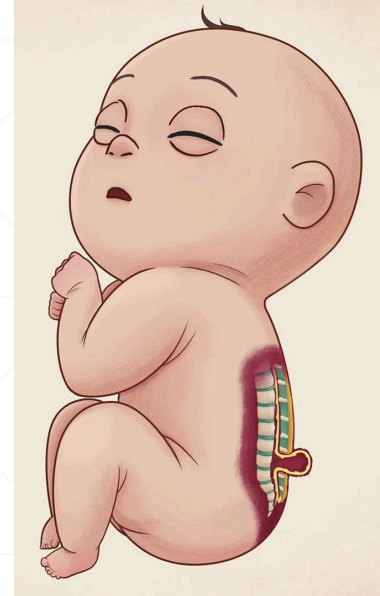
Myelomeningocele

# Etiology (Causes)

Happens within the first 28 days of pregnancy (1<sup>st</sup> month), usually before the woman knows she's pregnant.

Possible causes:

- Genetic and environmental risks
- History of neural tube defects
- Folate deficiency (CDC- Centers for Disease Control and Prevention suggests women to take 400mg folic acid everyday, and eat foods rich in folate: asparagus, oranges, avocados, grains)



15 foods high in folate  
(B9)



# Dental Complications and Role of the Dental Team

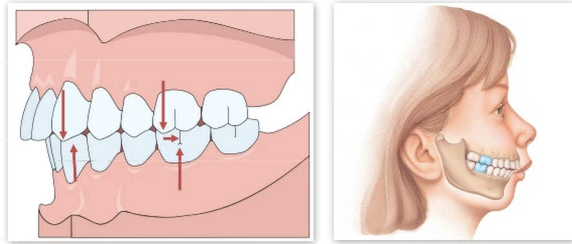


- **Walking and mobility problems, some of them use wheelchairs**, so based on comfort and safety, determine whether to remain in wheelchair or transfer to dental chair. Soft bean bags can help support their sensitive vertebrae, and minimize risk of pressure wounds



- **Increased latex allergy**
  - Prepare latex free cart
  - Be cautious of things in dental area that contains latex (rubber dams, bite blocks)
  - Use latex free gloves

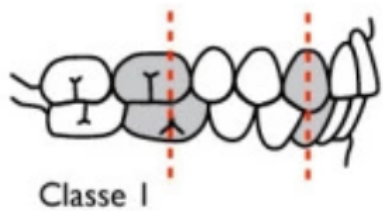
# Dental Complications and Role of the Dental Team



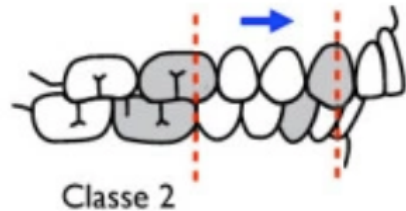
Class II Malocclusion



- Spina bifida can cause **Arnold Chiari II Malformation**- brain stem and cerebellum extend into foramen magnum. Concerns with swallowing, breathing, and sensitive gag reflex
- Position patient upright
- Limit use of water
- Maintain adequate suctioning
- Alternate between wet and dry gauze to cleanse oral cavity instead of using air/water syringe
- Patients are also at risk for **Angles Class II malocclusions and crowding**  
-> increased risk for developing caries and periodontal disease, oral hygiene education is important



Classe I



Classe 2