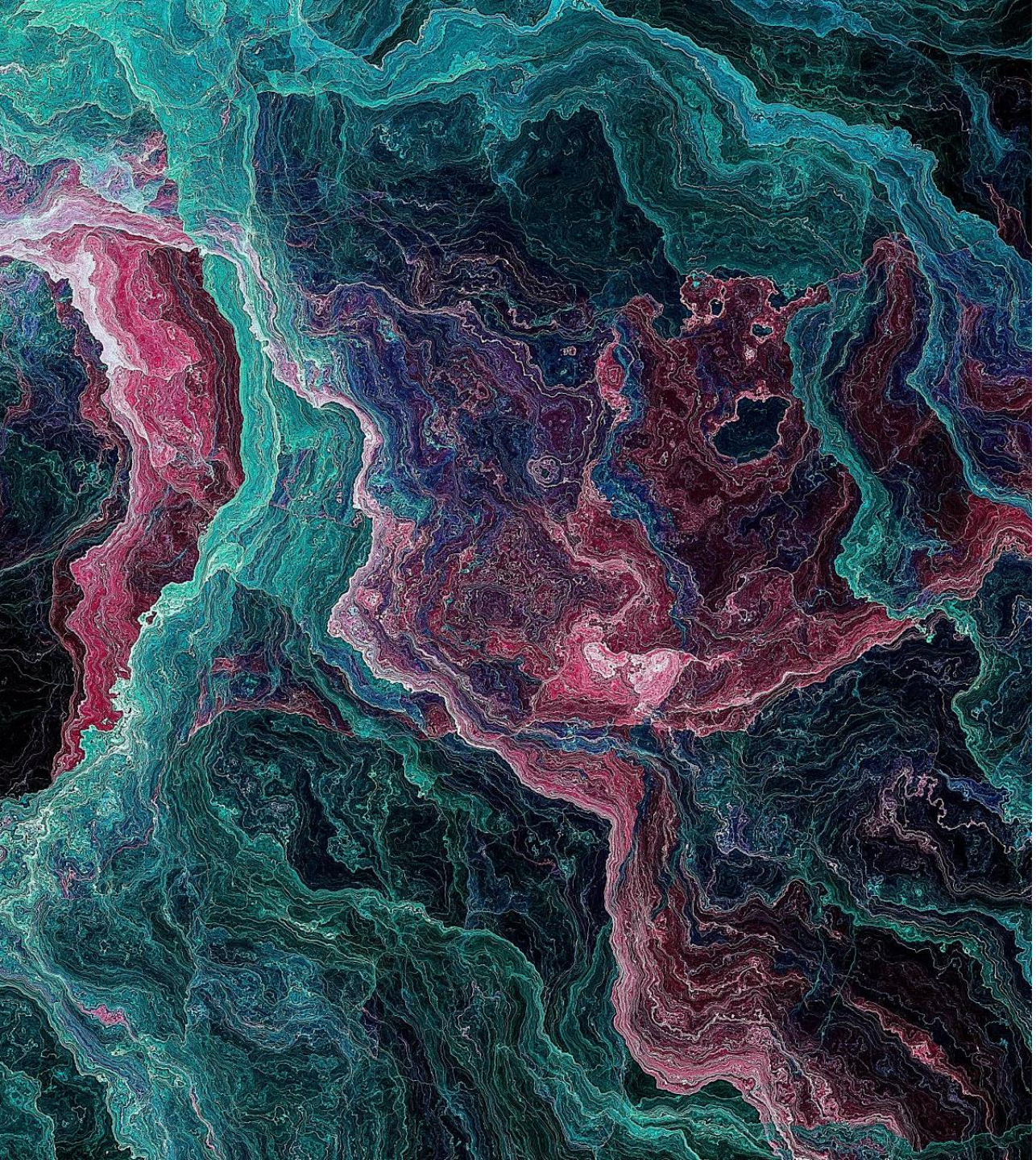

TERATOGENS IN PREGNANCY

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TERATOGENS IN PREGNANCY

A **teratogen** is a substance that interferes with normal fetal development and causes congenital disabilities. Drugs, alcohol, chemicals and toxic substances are examples of teratogens.

Teratogens can also increase the risk for miscarriage, preterm labor or stillbirth.

TERATOGENS IN PREGNANCY

The following factors determine how **dangerous** teratogen exposure is during pregnancy:

- The drug, substance or type of toxin.
- How long were exposed.
- The amount of exposure (dosage or quantity).
- The **gestational age** of the fetus (weeks of pregnancy) at exposure.
- Hereditary factors that could increase the fetus's risk.

TERATOGENS IN PREGNANCY

Fetal exposure to teratogens accounts for about 4% to 5% of congenital disorders. Studies have also shown that exposure to teratogens affects cognitive and physical development.

It's best to avoid teratogens at all times during pregnancy. However, teratogenic exposure is more damaging at certain times in fetal development.

WHAT ARE EXAMPLES OF TERATOGENS?

Alcohol, cigarettes and recreational drugs are known teratogens.

- Alcohol affects the fetus's central nervous system. Drinking alcohol during pregnancy increases the fetus's risk for fetal alcohol syndrome.

- Cigarette smoking is associated with fetal growth restriction, premature birth and miscarriage. **Smoking** also affects the fetus's sensitive lung tissue and brain.

WHAT ARE EXAMPLES OF TERATOGENS?

- Certain over-the-counter (OTC) and prescription **medications** are considered teratogens.

Examples of teratogenic medications are:

- Antiepileptic drugs (AEDs)
- Antimicrobials
- Anticoagulants
- Antithyroid medications
- Vitamin A (a common ingredient in skincare products)
- Hormonal medication

HOW IS MEDICATION RATED FOR SAFETY DURING PREGNANCY?

Medscape® www.medscape.com

FDA Pregnancy Categories

Category	Interpretation
A	Controlled studies show no risk: Adequate, well-controlled studies in pregnant women have failed to demonstrate risk to the fetus.
B	No evidence of risk in humans: Either animal findings show risk, but human findings do not; or, if no adequate human studies have been done, animal findings are negative.
C	Risk cannot be ruled out: Human studies are lacking, and animal studies are either positive for fetal risk or lacking as well. However, potential benefits may justify potential risk.
D	Positive evidence of risk: Investigational or postmarketing data show risk to the fetus. Nevertheless, potential benefits may outweigh risks.
X	Contraindicated in pregnancy: Studies in animals or humans, or investigational or postmarketing reports, have shown fetal risk that clearly outweighs any possible benefit to the patient.

WHAT ARE EXAMPLES OF TERATOGENS?

Infections, viruses, parasites and other bacterial illnesses can pose serious threats to a pregnant woman and the fetus. The acronym **TORCH** helps to classify some of these:

- Toxoplasmosis (an infection that spreads through cat feces).
- Other infections like group B streptococcus, listeria, candida and sexually transmitted infections (STIs).
- Rubella.
- Cytomegalovirus (CMV).
- Herpes simplex virus.
- Syphilis

WHAT ARE EXAMPLES OF TERATOGENS?

Certain **chemicals and substances** may cause congenital abnormalities. These birth disorders include spina bifida, cleft palate or neurological problems. Some examples of toxins or chemicals are:

Radiation exposure (from X-rays) or chemotherapy.

Hot tubs, saunas or other heat sources that raise your body temperature.

Mercury (found in certain types of fish).

Lead (commonly found in paint and pipes in older homes).

Toxic chemicals or heavy metals found in the workplace or manufacturing facilities

WHAT BIRTH DEFECTS DO TERATOGENS CAUSE?

Teratogens cause many known **congenital disorders**. Some of the most common abnormalities are:

- Brain or spinal cord issues like anencephaly.
- Physical or structural malformation like small bones or missing body parts.
- Cleft lip and palate.
- Cognitive impairment or neurological issues.
- Cardiovascular issues or heart conditions.

Cleavage	Embryonic period (weeks)						Fetal period (months)					
1	2	3	4	5	6	7	8	4	5	6	7	8	9

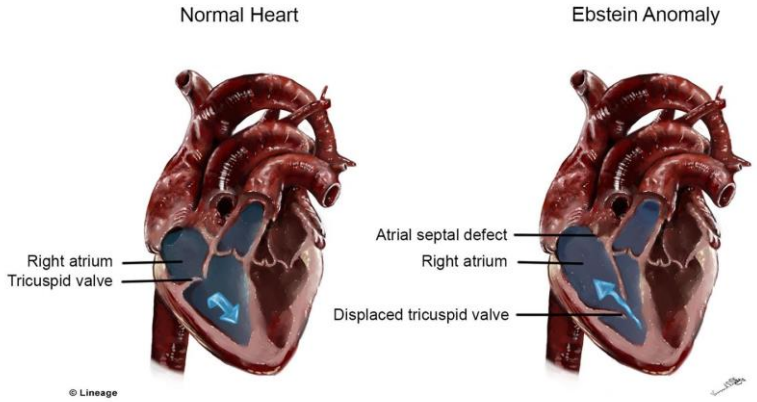
Response to teratogens

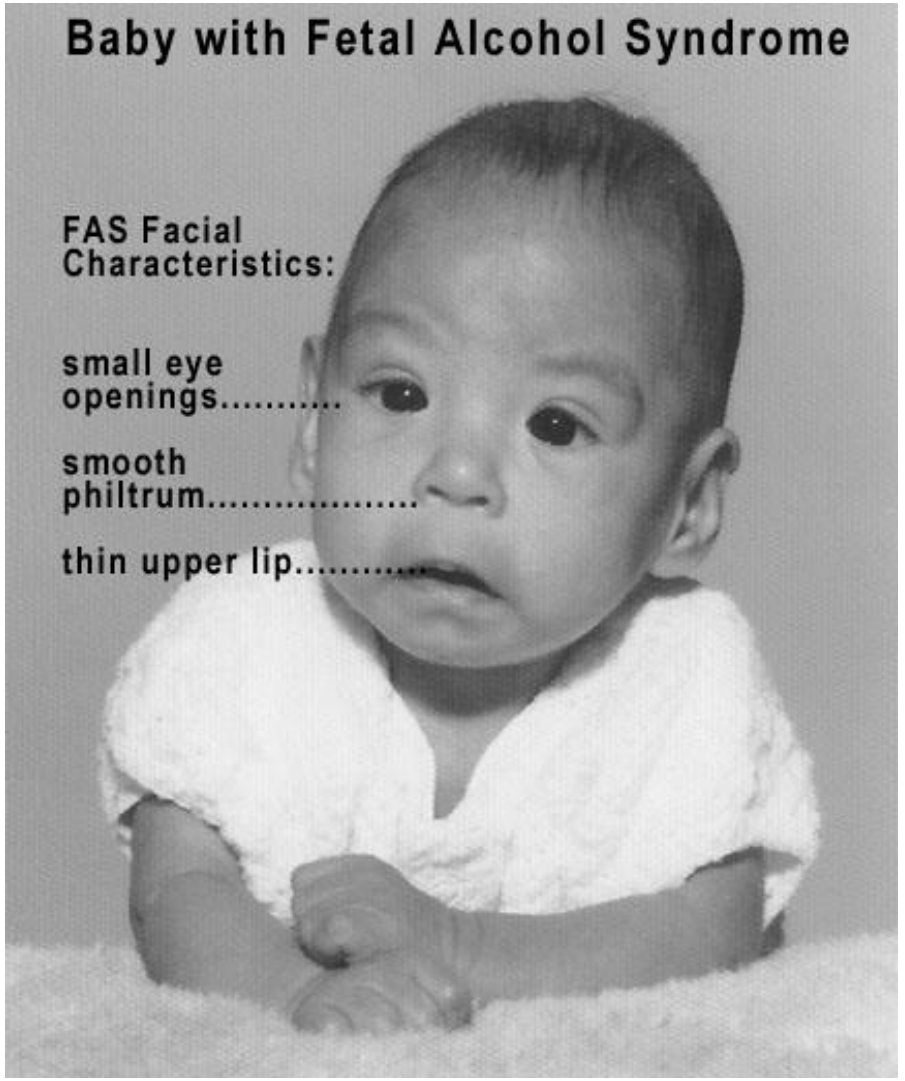
Death or regulation

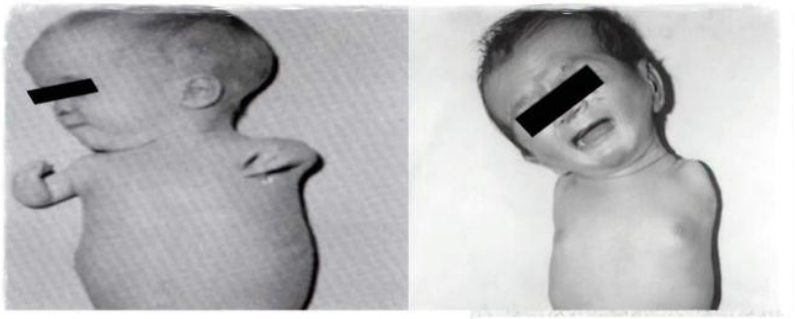
- Heart
- CNS
- Eyes
- Ears
- Lips and midface
- Palate
- Teeth
- Upper limbs
- Lower limbs
- External genitalia

Less sensitive period (functional and/or minor structural anomalies)

Highly sensitive period (major structural anomalies)


Normal Heart
Ebstein Anomaly
Right atrium
Tricuspid valve
Atrial septal defect
Right atrium
Displaced tricuspid valve
© Lineage


Baby with Fetal Alcohol Syndrome
FAS Facial Characteristics:
small eye openings.....
smooth philtrum.....
thin upper lip.....



THANKS FOR YOUR KIND ATTENSION