Contents
Introduction ........................................................................................................................................ 2
Definition ........................................................................................................................................ 2
Prevalence ....................................................................................................................................... 2
Causes ............................................................................................................................................ 2
Genetic causes ................................................................................................................................. 2
Non-genetic causes .......................................................................................................................... 2
Teratogens ....................................................................................................................................... 2
Constraint ....................................................................................................................................... 3
Unknown causes ............................................................................................................................... 3
Pathophysiology of birth defects ..................................................................................................... 3
Inheritance ...................................................................................................................................... 4
Chromosome abnormalities ............................................................................................................... 4
Abnormal number of chromosomes ............................................................................................... 5
Abnormal structure of chromosomes ............................................................................................. 6
Types of Birth defects ...................................................................................................................... 7
Single Gene abnormalities ................................................................................................................ 7
Causes of single gene abnormality .................................................................................................... 7
Common single gene disorders ......................................................................................................... 10
Multifactorial Birth defects ............................................................................................................. 11
Prognosis ....................................................................................................................................... 11
Diagnosis ....................................................................................................................................... 11
Treatment ...................................................................................................................................... 12
Short Repertory of Birth defects ..................................................................................................... 12
Bibliography ................................................................................................................................... 21
Introduction
There are certain unpleasant surprises faced at occasions, not expected to have unhappiness, except celebrations. This article is intended to enable one to-

- Understand the prevalence of birth defects.
- Know the causes of birth defects.
- Understand chromosomal inheritance.
- Understand the inheritance of single genes.
- Define a multifactorial birth defect.
- Define teratogens and know their dangers.

Definition
A birth defect is an abnormality of structure or function in an individual, which is present since birth. The birth defect may be clinically apparent at birth, or may appear later in life. For example, a neural tube defect is a structural defect which is clear at birth while hemophilia, which is also since birth, is a functional defect and may become diagnosed in an older child. Birth defects often present as an abnormal look or failure to grow.

Congenital disorder is synonymous, means present at birth.

Malformations are the commonest form of birth defect. Congenital malformations develop during the first trimester and are caused by failure of normal development of embryo. This results in a birth defect of one or more organs. Congenital malformations occur early in pregnancy during formation of embryo. Many minor birth defects are not recognized and diagnosed.

Individual with abnormal appearance is called as dysmorphic which may resemble normal features found in a family or community.

Prevalence
Two to three percent of live newborn infants may have birth defect. Birth defects are an important cause of infant and childhood death.

Causes
Birth defects may be caused by genetic or non-genetic factors. Some causes are still unknown.

Genetic causes
These include the problems present before conception and constitute about 40% of birth defects-

a. Chromosome abnormalities
b. Single gene defects
c. Multifactorial disorders

Non-genetic causes
All birth defects are not due to genetic causes. These include problems occurring after conception and constitute about 10% of birth defects-

Teratogens
Any fetal environmental factor that can cause a birth defect. This is different from multifactorial birth defects as teratogens cause birth defects without an obvious genetic factor. Teratogens do not cause
birth defects during the pre-implantation phase of development. Some common teratogens are listed below:

1. Maternal infections
   - Rubella virus
   - Cytomegalovirus (CMV)
   - Toxoplasmosis
   - Herpes simplex virus.
   - Varicella virus (chicken pox and herpes zoster)

2. Maternal illnesses
   - Diabetes mellitus
   - Epilepsy

3. Radiation in very large doses
   - Excessive amounts of X-ray
   - Nuclear radiation (e.g. Chernobyl)

4. Drugs
   - Alcohol
   - Retinoic acid (for severe acne)
   - Some antibiotics (e.g. tetracycline, streptomycin)
   - Anti-cancer drugs (e.g. methotrexate, thalidomide)
   - Warfarin (an anticoagulant)
   - Some anti-convulsants (e.g. phenytoin, valproic acid)
   - Lithium (an antidepressant)

5. Environmental pollutants
   - Methyl mercury.
   - There are probably many more which have not yet been identified.

Constraint
External forces resulting in birth defects after the fetus is normally formed are called constraints. Thus, constraint is the type of birth defect caused by local mechanical pressure in the uterus deforming or disrupting part of the fetus. There are two types of birth defects due to constraint:

1. Seldom, a normal fetus becomes deformed by mechanical force in the uterus as in multiple pregnancies, causing little space in the uterus, oligohydramnios or large uterine fibroids. The head or chest may become abnormal in shape or the limbs may be bent often called as deformity. Deformities usually correct themselves after delivery once the pressure has been removed.

2. Sometimes an amniotic band may damage a limb or other part of the body. A finger, toe or part of a limb may be amputated or have a constriction ring. The amniotic band results from a tear in the amnion early in pregnancy. This uncommon form of birth defect is called a disruption.

Unknown causes
These include problems due to causes not yet known and include about 50% of birth defects.

Pathophysiology of birth defects
Chromosomes are packages of DNA or deoxyribonucleic acid which store entire genetic plan of all the inherited characteristics of an individual. No two DNA are identical hence no to persons are alike, giving birth to the theory of individualization.
Human cells have 23 pairs of chromosomes in the cell nucleus. 22 pairs are called autosomes and one pair as sex chromosomes. X chromosome is longer than the Y chromosome. Females have two X chromosomes (XX) while males have one X and one Y chromosome (XY).

A picture of the 46 chromosomes is called a karyotype. The normal female karyotype can be written as 46,XX and the normal male karyotype as 46,XY. Each pair of autosomes is given a number- 1 to 22.

**Inheritance**

One chromosome of each pair of chromosomes is inherited from the mother and the other from the father. Therefore, half of the inheritance in each individual is from the mother and the other half from the father. This is called sexual reproduction. This is why the child has features of both parents.

The parental chromosomes are paired, hence called diploid. After meiosis, the haploid gametes are formed, called as ovum and sperms.

After fertilization of ovum with sperm, the zygote is formed which divides by mitosis, multiplies and grows to become an embryo with cells developing into different organs. The embryo develops into the fetus which has formed organs. After delivery the fetus is called the newborn infant.

---

**Normal karyotype of a male (46,XY) with 23 pairs of chromosomes (22 pairs of matching autosomes and one pair of unlike sex chromosomes, X and Y)**

**The normal chromosome contribution of each parent**

**Chromosome abnormalities**

The process of reproduction is not always perfect. Anomalies can occur in the chromosomes leading to a birth defect. Chromosome abnormalities include-
Abnormal number of chromosomes

This occurs during the formation of the gametes when a pair of the parent’s chromosome does not split normally. Instead of one chromosome of a pair going to each gamete, one gamete gets both the paired chromosomes, and therefore has 24 chromosomes, while the other gamete does not get a copy of that chromosome and, therefore, only has 22 chromosomes. This abnormal process of cell division, which results in two abnormal gametes, is known as non-disjunction.

![Diagram of non-disjunction](image)

When either of these two abnormal gametes fertilize with a normal gamete (containing 23 chromosomes) the resulting zygote will have either of the following:

**Trisomy**

Trisomy is presence of an extra chromosome i.e. 47 (24 + 23) in the cell. The chromosomes which can result in an infant being born alive and surviving with trisomy are 13, 18, 21, X and Y. The common trisomies are:

- Trisomy 21 or Down syndrome (47, XY+21 or 47, XX+21)
- Trisomy 18 or Edward syndrome (47, XY+18 or 47, XX+18)
- Trisomy 13 or Patau syndrome (47, XY+ 13 or 46, XX+13)
- XXY in a male or Klinefelter syndrome (47, XXY)
- Trisomy X in a female (47, XXX)
- XYY in a male (47, XYY)

![Karyotype of Down syndrome](image)
**Monosomy**
One chromosome less with 45 (22+23) chromosomes in the cell. The only chromosome that can be lost and result in a live born infant with monosomy is a sex chromosome X or Y. Therefore, the only monosomy seen is Turner syndrome (45, X0).

Most fetus with trisomy and monosomy are not capable of living and result in early spontaneous abortion.

**Mosaicism**
Mosaicism is the presence of two different cell types of the same genetic origin in a person. In mosaicism, an error occurs in the zygote. During early mitosis, one of the cells is involved in non-disjunction resulting in one cell having 47 chromosomes (trisomy) and the other cell only 45 chromosomes (monosomy). The monosomy cell usually dies but the trisomy cell may survive and divide. All cells that come from it are trisomy cells. Therefore, the embryo, fetus and infant that result will have some cells which are normal with 46 chromosomes and other cells which are abnormal with 47 chromosomes.

For example, if the non-disjunction was with chromosome 21 in a female then the newborn infant would have some cells of 46, XX and others of 47, XX+21 resulting in mosaic Down syndrome (46, XX/47, XX +21). Mosaicism causes 1 to 2% of the infants born with Down syndrome. People with Turner syndrome can also be mosaic (46, XX/45, X0).

**Marker Chromosome**
Some people have an extra piece of chromosome material that is called a marker chromosome. Its effect on the person depends on what piece of chromosome is involved. Some people with marker chromosomes are normal, while others can have a chromosome disorder.

**Polyploidy**
In the formation of gametes, if none of the chromosome pairs separates, then 46 chromosomes will go to one gamete and none to the other gamete. If the gamete with 46 chromosomes becomes fertilized with a normal gamete with 23 chromosomes, the resulting zygote will have an extra set of chromosomes, i.e. 69 chromosomes (69, XXX or 69, XXY). This is called triploidy. It is also possible to have more than one extra set of chromosomes (polyploidy). Embryos with polyploidy usually abort spontaneously early in pregnancy. On the rare occasion when a triploidy (three sets of chromosomes) infant is born, it is very abnormal and either dies before delivery or very early in the neonatal period.

**Abnormal structure of chromosomes**

**Translocation**
Translocation occurs when a piece of one chromosome breaks off and joins i.e. translocates onto another chromosome. Translocation may be of two types-

**Balanced translocation**
If no genetic material is lost or gained, the process is called a balanced translocation and the person is clinically normal. Persons with balanced translocations are at risk of passing on the abnormal chromosomes to their offspring, resulting in abnormal embryos with unbalanced translocations. This can be the cause of recurrent spontaneous abortions or abnormal infant. This risk varies according to the type of translocation.

**Unbalanced translocation**
If chromosome material is lost or gained then this is an unbalanced translocation and the person will be abnormal.
Deletion
This occurs when a piece of a chromosome is missing. There are several syndromes in which a known piece of chromosome is missing. These include-

- Prader Willi syndrome with deletion of a specific piece of chromosome 15.
- Deletion 22 syndrome with deletion of a specific piece of chromosome 22.
- Cri du chat (cry of a cat) syndrome with loss of a piece of the small arm of chromosome 5.

Chromosomal Duplication
Sometimes a piece of chromosome copies itself and therefore the chromosome has two identical pieces of the chromosome and the genetic plan has extra chromosome material. This is called chromosomal duplication. There are chromosome duplication syndromes, e.g. Cat Eye syndrome in which a piece of chromosome 22 is duplicated.

Ring Chromosome
A piece of one end of a chromosome may come off or deleted making it sticky. This end then sticks to the other end making a ring chromosome. Because genetic material is lost from the one end of the chromosome in the process, the person usually has a chromosome disorder, often associated with growth failure and intellectual disability.

Types of Birth defects
Birth defects may be divided into-

1. Malformations
2. Deformations
3. Disruptions

Based on causes, Birth defects can be classified as under-

Single Gene abnormalities
A birth defect that results from an abnormality in a gene is called a single gene defect.

The genetic material on chromosomes is divided up into smaller packages of DNA called genes. Gene is the smallest unit or sector of a chromosome containing the genetic code and controls a cell function. Like chromosomes, genes occur in pairs on 22 autosomes and two sex chromosomes. One gene from each parent is inherited. This each pair of genes is called allele, and each allele, usually determines a single inherited function by giving a set of instructions to the cell, such as a physical feature or a single biochemical product e.g. production of a protein or an enzyme.

Children look like their parents because their genes are a blend inherited from both mother and father. As this combination varies with each child, siblings look alike and yet have their differences. The only individuals with identical genes are identical twins.

If the structure of the gene is abnormal, the instruction will also be abnormal and this may be harmful to the individual.

Causes of single gene abnormality
Practically, all genes are normal and give the cells correct instructions. A gene can become abnormal by mutation. A mutation is a change in gene structure that can cause abnormal gene function and a birth defect.
Mutations occur rarely and may be spontaneous or may occur due to environmental factors like radiation (solar radiation, nuclear radiation or excessive X-rays). These abnormal genes can be passed onto the next generation in the same way as normal genes are inherited. Unlike chromosomal defects, single gene defects are usually inherited.

In mutation, the gene gives instructions for an incorrect sequence of amino acids and, as a result, an abnormal protein or enzyme is formed. A mutated gene may cause a clinical problem, a mild variation like red hair or rarely a survival benefit e.g. resistance against malaria.

Types of inheritance
A gene may be either a dominant or a recessive. Both types of genes may be normal or abnormal.

Dominant inheritance and autosomal dominant disorders
A dominant gene controls the function of that gene pair. If dominant gene is abnormal, the instructions sent from that gene pair will also be abnormal. Consequently, the cell may not function normally, causing a birth defect.

If the dominant gene is on one among 22 autosomes, it is called an autosomal dominant gene. A clinical disorder caused by a mutation in an autosomal dominant gene is called an autosomal dominant disorder. These conditions may be mild or severe but usually are not lethal. Males and females are equally affected by autosomal dominant disorders.

While most autosomal dominant genes are inherited, an autosomal dominant gene may also appear in a person for the first time in a family as a result of a fresh mutation. This new mutated gene can be passed onto future generations in the same way as other autosomal dominant genes are inherited.

The pattern of autosomal dominant inheritance. There is a 50% chance that the autosomal dominant gene (e.g. D) will be passed from the affected parent to each child no matter whether a boy or girl.

Variable expression
In a single family, some members may show all the clinical features caused by the dominant gene while others who inherit the gene may only express some features. This is known as variable expression as seen in neurofibromatosis.

Variable penetrance
Some family members with a dominant gene may not show any of its features at all. This is called variable penetrance as in polydactyly.

If both parents have the same dominant gene, there is a 75% chance that each child will inherit a gene from this pair. There is also a 25% chance of the child inheriting both dominant genes, which is usually fatal if the dominant genes are abnormal.
Recessive inheritance and autosomal recessive disorders

When a dominant gene suppresses a weaker gene, the later is called a recessive gene. The dominant gene alone controls the function of this pair. A person having a hidden recessive gene is called a carrier who is heterozygous for that pair of genes. If both genes are same, the person is called homozygous for that pair of genes.

If both genes are recessive they both together control function of the cells like a dominant gene. Recessive genes may be normal as in carrying instructions for blue eyes or abnormal as in carrying instructions for oculocutaneous albinism. If both recessive genes are abnormal, that function of the cell will also be abnormal. A recessive gene on an autosome is called an autosomal recessive gene. Almost all normal individuals carry five to ten abnormal recessive genes. But being heterozygous for that gene, it generally has no effect on health.

The pattern of autosomal recessive inheritance. If both parents are heterozygous for a recessive gene, there is a 25% chance that a child will be homozygous and 50% chance that a child will also be heterozygous for that gene. If both parents are carriers i.e. heterozygous for the same recessive gene, their children will have a 25% chance of inheriting the recessive gene from both mother and father and the child will be homozygous. Their children will also have a 50% chance of inheriting a recessive gene from only one parent to become a carrier or heterozygous. Getting the same recessive gene from both parents is commoner if the parents are closely related, e.g. siblings, cousins or an uncle and a niece as in intermarriage or a consanguineous relationship, as they may inherit the same recessive gene from a common ancestor.

With autosomal recessive inheritance, the parents and grandparents are usually normal and do not show the effect of the recessive gene. If a child inherits two abnormal autosomal recessive genes, one from each parent, he will show an autosomal recessive disorder.

The majority of single gene defects are autosomal recessive. Males and females are equally at risk of an autosomal recessive disorder.

If only one parent is heterozygous or carrier, the children cannot be affected but they have a 50% risk of inheriting the recessive gene and become a carrier.

If both parents are carriers of a recessive gene, there is a 25% chance that their child will inherit both recessive genes.
X-linked recessive inheritance
If a recessive gene is on X chromosome, it is called an X-linked recessive gene. X-linked dominant genes and Y-linked genes are very rare.

X-linked recessive genes are inherited by girls in the same way as autosomal recessive genes. Girls have two X chromosomes and all the X-linked genes are in pairs. However, as the X and Y chromosomes are not identical the X-linked recessive genes in a male are not matched to a gene on the Y chromosome. Therefore, the X-linked gene, whether dominant or recessive, alone controls that cell function in males.

As with autosomal recessive inheritance, a mother has a 50% chance of passing her X-linked recessive gene to both her sons and daughters. It only influences the function of the cell in sons. It has no effect in her daughters as the gene is matched by a gene on the other X chromosome, inherited from the father.

Therefore, disorders caused by X-linked recessive genes are carried by females and affect males. Males have unaffected sons as they give them their Y and not their X chromosomes. However, there is a 100% chance that each daughter of an affected male will be a carrier. Disorders caused by an X-linked recessive gene are called X-linked recessive disorders, like color blindness and hemophilia. X-linked recessive disorders affect males and not females.

The pattern of X-linked recessive inheritance. There is a 50% chance that the recessive gene from the mother will be inherited by both sons and daughters. Only sons will be clinically affected as the X-linked recessive gene in daughters will be paired by a normal matching gene from the father.

Common single gene disorders

**Autosomal dominant disorders**
- Polydactyl
- Achondroplasia (short-limbed dwarfism)
- Neurofibromatosis

**Autosomal recessive disorders**
- Sickle cell anemia
- Thalassemia
- Oculocutaneous albinism

**X-linked recessive disorders**
- Red–green color blindness
- Hemophilia
• Glucose-6-phosphate dehydrogenase deficiency (G6PD)

Some single gene disorders are more common in particular populations or regions, e.g. sickle cell anaemia in West Africa, cystic fibrosis in Europe, thalassaemia in Mediterranean countries and polydactyly in black South Africans. Most autosomal recessive conditions are found in tropical countries.

Some conditions, such as polycystic kidneys, osteogenesis imperfecta, retinitis pigmentosa and mental retardation, may be inherited by more than one mode of inheritance, as a dominant or recessive disorder.

Multifactorial Birth defects
These are birth defects that have a combined genetic and environmental cause. The person affected with a multifactorial birth defect inherits a combination of genes from their parents that places them at an increased risk for a birth defect. If that individual then experiences certain environmental factors, the result will be a multifactorial birth defect. Multifactorial birth defects, therefore, require both genetic and environmental factors before they present. Neither the genetic factor nor the environmental factor alone will cause the birth defect. Multifactorial birth defects are common but usually involve a single limb, organ or system and have a low risk of recurrence. They often present in infancy or childhood as congenital malformations including:

• Neural tube defects
• Isolated hydrocephalus
• Clubfoot
• Cleft lip and/or palate
• Congenital heart defects

Prognosis
Birth defects may be minor or grave. A mild defect causes no disability while a serious birth defect may cause death soon after birth, or a survival with a disability due to the direct effect of the birth defect or due to a secondary effect. Serious birth defects need care and treatment to save life or reducing serious disability. Examples of birth defects that can present for the first time in adulthood include inherited cancers, Huntington disease and adult onset polycystic kidney disease.

Birth defects affect broadly and may cause death, physical disability, intellectual disability, blindness, deafness, epilepsy etc.

Diagnosis
1. Clinical
2. Radiological
   • X Ray
   • Ultrasound
   • CT
   • MRI
   • PET
3. Karyotype
4. Enzymatic assays
**Treatment**

Major plan of treatment is management and rectification of defects either medically or surgically. Most of the birth defects are either due to causa occasionalis or syphilitic miasm. Antimiasmatic remedies act wonderfully and sustain normal life. Minor birth defects are absolutely cured while major ones are satisfactorily relieved. The following are main remedies for Birth defects:


**Short Repertory of Birth defects**

**Abdomen - BLEEDING, peritoneum - umbilicus, in newborns abrot. Calc-p.**

**ABDOMEN - DISCHARGE from umbilicus - bloody fluid - children; in – newborns ABROT. calc-p.**

**ABDOMEN - DISCHARGE from umbilicus - children; in – newborns abrot.**

**ABDOMEN - ERUPTIONS - Umbilical region - newborns, in abrot.**

**ABDOMEN - ERUPTIONS - Umbilicus - Around - children; in - newborns; in - accompanied by - appetite; diminished abrot.**

**ABDOMEN - ERUPTIONS - umbilicus, region of - newborns, in abrot.**

Abdomen - ERUPTIONS - umbilical, region - newborns, in abrot.

**ABDOMEN - ERYSIPELAS - umbilical, in newborn apis**

**ABDOMEN - ERYSIPELAS - umbilicus, region of, in newborn apis**

**ABDOMEN - HEMORRHAGE - umbilicus, in newborns abrot. CALC-P.**

**ABDOMEN - HERNIA - general - inguinal region - children, in - newborns, in acon. ant-c. borx. calc. cham. lyc. nux-v. op. sil. stann. sul-ac. sulph.**

**ABDOMEN - HERNIA; ABDOMINAL - Umbilical - children; in – newborns nux-m.**

Abdomen - ICTERUS, newborn chel. chion. coll. merc. nux-v.

**ABDOMEN - INFLAMMATION - Small intestine - infants – newborns coli.**

**ABDOMEN - INFLAMMATION - Umbilicus - children; in - newborns; ulceration of umbilicus in abrot. apis calc-p.**

**ABDOMEN - Large - abdomen large, from child birth Coloc. Sep.**

**ABDOMEN - PAIN - children; in – newborns coloc. mag-p.**

**ABDOMEN - ULCERS - Umbilicus, about - children; in – newborns apis**

Abdomen - ULCERS. abdomen - umbilicus, about – newborn apis


**ABDOMEN - Umbilicus, navel - Bleeding from, in newborn abrot. Calc-p.**

12

ACUTE DISEASES - Pediatrics - down’s syndrome - plan of action – remedies bar-c. bufo

ACUTE DISEASES - Pediatrics - down’s syndrome - plan of action – nosode syph.


AIDS, acquired immune deficiency syndrome - anxiety, with acon. ars. phos. thuj.

AIDS, acquired immune deficiency syndrome - despair, with ars. Aur.

AIDS, acquired immune deficiency syndrome - exhaustion, with carc. ferr. gels.

AIDS, acquired immune deficiency syndrome - high fevers, with periodic carp.


Thuj. Tub. urea urin. vanad. x-ray

BACK - CURVATURE of spine - Scheuermann's syndrome v-a-b.


BLADDER - RETENTION of urine - babies, in - birth, at Acon. apis

BLADDER - RETENTION of urine - children, in - newborn infant, fails to urinate ACON.


BLADDER - RETENTION of urine - general - children, in - newborn infants, in ACON. APIS ARS. benz-ac. CAMPH. CANTH. CAUST. erig. hyos. LYC. op. puls.

BLADDER - RETENTION of urine - general - children, in - newborn infants, in - passion, anger of the nurse, after OP.

Bladder - RETENTION, of urine - babies, in - birth, at Acon. apis

Bladder - RETENTION, of urine - babies, in - newborn infant, fails to urinate ACON.

Bladder - RETENTION, of urine - babies, in - newborn infant, fails to urinate ACON.

BLOOD - HEMORRHAGE - newborns, in, during delivery chin.


CHEST - NODULES - mammae - newborn, in cham.

CHEST - NODULES, sensitive - Mammæ - children; in – newborns cham.


Children - CRYING, children - birth, sine acon. carc. cham. syph.

Children - EDEMA, newborn, in Apis carb-v. coffin. dig. lach. sec.

Children - ICTERUS, newborn chel. chion. coll. merc. nux-v.

Children - JAUNDICE, newborn infants, in - stool, with bilious elat.


Children - MARASMUS, children - nourishment, from defective Nat-m.

Children - MARASMUS, children - old man, like an, had not grown, limbs lax, skin wrinkled - bones of Skull had lapped over during birth op.


Children - URINE, retention, in - infants, in new born - newborn, fails to urinate acon. apis arn.

Children infants - suckling - dié, early, birth after arg-n.

CHILL - CHILLINESS - children; in - newborns coli.


CLINICAL - DROPSY - newborn, in apis carb-v. coffin. dig. lach. sec.

Clinical - edema, general - newborn, in Apis carb-v. coffin. dig. lach. sec.

Clinical - erysipelas, general - newborns - traumatic, umbilical, newborn apis

Clinical - erysipelas, general – newborns apis bell. camph.

Clinical - erysipelas, general, umbilical, newborn apis

Clinical - icterus, jaundice, newborn card-m. chel. chion. coll. merc. nux-v.

Clinical - jaundice, general, icterus - newborn, children - stool, with bilious elat.


Clinical - laryngismus, stridor - newborns, in samb.

Constipation - infants, of – newborn zinc.


Constitutions - LYMPHATIC, constitutions - reaction, weak and defective phel.

Constitutions - WEAK, constitutions - irritable, lymphatic, weak, and defective reaction phel.

Coryza – newborn dulc.

DOWN'S, syndrome BAR-C. Bar-m. calc. Carc. pitu-gl. thyr.

Dropsy oedema – newborn apis carb-v. dig. lach. sec.

EAR - DISCHARGES - birth, from viol-o.

Ears - discharge, from - birth, from viol-o.

Endocarditis, heart, inflammation - repeated, attacks with valvular defects, affecting right ventricle, which becomes dilated kali-i.

Eruptions; tendency to – newborn dulc.

Erysipelas - newborn babies bell. camph.

EXTREMITIES - CARPAL tunnel syndrome calc-p. calc. caust. guaj. plb. ruta viol-o.

EXTREMITIES - CLENCHING - Fists - children; in – newborns cham.

EXTREMITIES - DISCOLORATION - Nates - redness – newborns med.

EXTREMITIES - DISCOLORATION - redness - hand - palm - newborns, in absin.

EXTREMITIES - DISCOLORATION - redness - upper limbs - hands - palms - newborns, in absin.

EXTREMITIES - ERUPTIONS - Nates - Between nates - rash in children, newborns; red MED.

EYE - DISCHARGES - bloody - watery - children; in – newborns cham.

EYE - INFLAMMATION - children; in – newborns acon. arn. kali-s. merc-c. puls. thu.


EYE - INFLAMMATION - Lachrymal ducts - children; in – newborns SIL.
EYE - STRicture of lachrymal duct - children; in – newborns Sil.
EYE - TEARS - bloody - newborn; in cham.
EYE - ULCERATION - Cornea - children; in – newborns arg-n.
Eyes - bloodshot - water, from, in newborn cham.
EYES - HORNER syndrome Puls.
EYES - TEARS - bloody, newborn in cham.
Eyes - TEARS, eyes, general - bloody, newborn in cham.
EYES - ULCERATION - cornea - newborn, in arg-n.
Eyes - ULCERATION, eyes - cornea - newborns, in arg-n.
FACE - CLENCHED jaw - newborn, in ambr. camph.
FACE - CONVULSIONS, spasms - general - jaws - newborns, in camph.
FACE - DISCOLORATION - blush - newborn infant laur.
FACE - DISCOLORATION - yellow - newborn, in bov. nat-s.
FACE - ERUPTIONS - comedones - newborns, in bry. calc. eug. graph. nat-m. sabin. sulph. thuj.
FACE - EXPRESSION - old looking - children; in – newborns op.
FACE - EXPRESSION - old looking - newborns, in nat-m. op.
Face - EXPRESSIONS, facial - old, looking - newborns, in op. syph.
FACE - HIPPOCRATIC - children; in – newborns abrot. aeth.
FACE - LOCKJAW - children; in - newborns; in ambr. ang. camph. merc.
FACE - WRINKLED - children; in – newborns abrot. aeth.
FEMALE GENITALIA/SEX - DISPLACEMENT of uterus - defective nutrition, with weakness; from abies-c.
Fevers - CHILDREN, fever in - newborn, in, with startings Acon. bell. Camph.
Food - MARASMUS, general - nourishment, from defective Nat-m.
Food - MARASMUS, general - old, man, like an, had not grown, limbs lax, skin wrinkled - bones of skull had lapped over during birth op. syph.
GENERALITIES - CONVULSIONS - tetanic rigidity – newborn passi.
GENERALITIES - DROPSY - newborn, in apis carb-v. coffin. dig. lach. sec.
GENERALITIES - HEMORRHAGE - tendency or actual - newborns, in, during delivery chin.
GENERALITIES - WEAKNESS, enervation, exhaustion, prostration, infirmity - nutrition, from defective alet.
GENERAL - CHILDREN; complaints in – newborns acon.
GENERAL - CHILDREN; complaints in - nurslings - dying soon after birth arg-n.
GENERALS - CONVULSIONS - dentition; during - newborns; in strept-ent.
GENERALS - CONVULSIONS - heat; during - children; in - newborns; in camph.
GENERALS - CYANOSIS - children; in - birth; from borx. cact. dig. lach. laur.
GENERALS - DOWN's syndrome carb. morg-p. pert. toxo-g.
GENERALS - DROPSY - general; in - children; in – newborns apis carb-v. coffin. dig. lach. sec.
GENERALS - EMACIATION - appetite with emaciation; ravenous - children; in – newborns sanic.
GENERALS - EMACIATION - children; in - newborns; in - accompanied by - Umbilicus - discharge from umbilicus ABROT.
GENERALS - EMACIATION - children; in - newborns; in - birth trauma; after borx.
GENERALS - EMACIATION - children; in - newborns; in - bottle fed nat-p.
GENERALS - EMACIATION - children; in - newborns; in abrot. borx.
GENERALS - HISTORY; personal - birth trauma; of borx. nat-m.
GENERALS - REITER'S SYNDROME Med.
GENERALS - SICCA syndrome brass-n-o.
GENERALS - SJÖGREN'S SYNDROME nux-m. tub-m. tub.
GENERALS - WEAKNESS - children; in - newborns; in Aeth.
GENERALS - WEAKNESS - nutrition; from defective alet. Helon.
HEAD - BORES head in pillow - children; in – newborns cham.
HEAD - CLOSING premature, fontanels, prior to birth sanic.
HEAD - ERUPTIONS - milk crust - children; in - newborns - adenitis; with am-c. astac. bar-c.
HEAD - ERUPTIONS - milk crust - children; in – newborns calc. olnd. tub.
HEAD - FONTANELLES - closing premature, prior to birth sanic.
HEAD - HEMORRHAGE, brain - newborn, in
HEAD - INFLAMMATION - brain - newborns, in
HEAD - TUMORS - newborns, in calc-f.
Hearing - IMPAIRED, hearing - birth, from meph. tub.
Heart - ENDOCARDITIS, heart, inflammation - repeated, attacks with valvular defects, affecting right ventricle, which becomes dilated kali-i.
hepatitis A (newborns) ACON. ARN. ARS. BELL. BRY. Calc. CARD-M. CHEL. CHIN. CROT-H. Dig. LACH. LYC. MERC-D. MERC. NAT-S. NIT-AC. NUX-V. PH-AC. PHOS. PODO. PULS. Sec. SEP. Sulph.
Hydrocele - boys, of - birth, from rhod.
Kidneys - DEFECTIVE, elimination of cupr-ar. eucal. solid. ter.
Kidneys - ELIMINATION defective aegop-p. coch-o. cupr-ar. equis-a. eucal. solid. UVA viol-t.
KIDNEYS - SUPPRESSION of urine - newborns, in acon.
KIDNEYS - SUPPRESSION of urine, anuria - newborns, in acon.
Kidneys - SUPPRESSION, urine, kidneys - newborns, in acon. apis
Kidneys - WEAK, kidneys - function, defective apis solid.
Larynx - LARYNGISMUS, stridor - newborns, in samb.
LARYNX & TRACHEA - LARYNGISMUS stridulus - newborns, in samb.
Liver - JAUNDICE, icterus - newborn, children, in - stool, with bilious elat.
MALE - HERNIA, testes - congenital, newborns mag-m.
MALE - REITER syndrome jac-g. med.
Marasmus, general - nourishment, from defective Nat-m.
Marasmus, general - old, man, like an, had not grown, limbs lax, skin wrinkled - bones of skull had lapped over during birth op. syph.

MIND - AILMENTS FROM - adoption - newborn; adoption in - symptoms appear later lac-c. lac-f.
MIND - ANXIETY - newborns, in ACON. CHAM.
MIND - ANXIETY - newborns, in Acon. Cham.
MIND - ANXIETY - nursed; when the child is - after being nursed - newborns; in cham.
Mind - ANXIETY, general - newborns, in Acon. Cham.
MIND - DELUSIONS, imaginations - cat, he is a - kitten, a newborn marb-w.
MIND - DREAMS - cars, automobiles, of - brakes defective maias-l.
MIND - EATING - refuses to eat - children; in - birth trauma; after boxr.
Mind - IDIOCY, general - down's, syndrome, with BAR-C. calc. carc. pity-gl. thy.
MIND - JEALOUSY - children - newborn gets all the attention; when the Hyos. ign.
MIND - ORGANIC MENTAL SYNDROME nux-m.
MIND - SHRIEKING, screaming, shouting - children, in - constipation since birth, with aloe
MIND - THOUGHTS - birth; about olib-sac.
MIND - WEEPING - children, in - babies - birth - from birth on carc. syph.
Mind - WEEPING - children, in - babies - birth - immediately after syph.
MIND - WEEPING - continuously - children; in – newborns syph. thuj.
MOUTH - SPEECH – defective nux-m.
MUCOCUTANEOUS lymph node syndrome, kawasaki syndrome loxo-recl.
NERVOUS SYSTEM - Adynamia - From - prolapsus, protracted illness, defective nutrition alet. Helon.
NOSE - CORYZA - children; in – newborns dulc.
NOSE - CORYZA - worse - in newborn dulc.

NOSE - CORYZA, general - newborns, in ars. cham. dulc. nux-v. samb.
NOSE - SNUFFLES - infants – newborns calc-lac. DULC. LYC. merc. NUX-V. PULS. SAMB.

OLD, looking, children - old, man, had not grown, limbs lax - skin wrinkled, bones of skull had lapped over during birth, like an op.
Pelvis - ERUPTIONS, pelvis - perineum - newborn, in med.
RECTUM - CONSTIPATION - children, in – newborn BAC. CROC. NUX-V. OP. SULPH. ZINC.


RECTUM - DIARRHEA - children; in – newborns Aeth. coli.
RECTUM - ERUPTIONS - Anus; about - children; in - newborns - washing agg. med.
RECTUM - ERUPTIONS - Anus; about - children; in – newborns med.
RECTUM - ERUPTIONS - Anus; about - rash - children; in – newborns MED.
RECTUM - ERUPTIONS - Perineum - children; in – newborns med.
RECTUM - ERUPTIONS - perineum - newborns, in med.
RECTUM - IRRITATION - newborns; in med.
recter, syndrome jac-g. med.
RESPIRATION - ASPHYXIA - children, newborns - mother; from loss of blood of chin.
RESPIRATION - ASPHYXIA, death apparent - newborn infant acon. am-c. ANT-T. ARN. ars. atro-pur. BELL. CAMPH. chin. cimic. crot-h. CUPR. hydr-ac. hyos. LAUR. OP. sec. sul-h. upa. vip.
RESPIRATION - ASTHMATIC - birth of child, since hell.
RESPIRATION - DIFFICULT - children; in - newborns ant-t. laur.
SKIN - DISCOLORATION - yellow, jaundice, icterus, etc. - newborn children - stool, with biliaris elat.
SKIN - DISCOLORATION - yellow, jaundice, icterus, etc. - newborns, in stool, with biliaris elat.
SKIN - ERUPTIONS - children; in - newborns; in dulc. tub.
SKIN - ERYSIPELAS - children; in - newborns bell. camph. carb-an.
SKIN - ERYSIPELAS – newborns apis bell. camph.
Skin - ICTERUS, newborn card-m. chel. chion. coll. merc. nux-v.
SKIN - INDURATIONS, nodules, etc. - children; in – newborn camph.
SKIN - INFLAMMATION - desquamation; with - newborn; in viol-t.
Skin - YELLOW, discoloration, skin - newborn, children - stool, with biliaris elat.
SLEEP - DISTURBED - children; in – newborns Cham.
SLEEP - DISTURBED - newborn, in CHAM.
SLEEP- DISTURBED, sleep - newborns, in acon. Cham.
Sleep - INSOMNIA, sleeplessness - newborn, in Acon. Bell. carc. cham. coff. cypr. ign. op. psor. puds. sulph.
SLEEP - SLEEPLESSNESS - children; in – newborns Bell. cham. coff. cypr. op. psor. sulph.
SLEEP - SLEEPLESSNESS - general - newborn, in BELL. cham. coff. cypr. op. psor. sulph.
SLEEP - SLEEPLESSNESS - newborn, in Bell. cham. coff. cypr. op. psor. sulph.
SLEEP - WAKING - frequent - children; in - newborns; in Borx.
SLEEP - WAKING - frequent - newborn, in Borx.
SLEEP - WAKING, general - frequent - newborn, in Borx.
STOMACH - APPETITE - wanting - children; in – newborns lyc.
Stomach - PAIN, stomach - nursling, from Aeth.
STOMACH - VOMITING; TYPE OF - blood - children; in - newborns; in acon. lyc.
STOOL - BLOODY - children; in – newborns acon.
Teeth - CLENCHED, jaws, together, constant inclination to - newborn, in ambr. camph.
THROAT - SWALLOWING - difficult - children; in – newborns kali-c.
TONGUE - Dry, moist, salivation - GENERAL - SJÖGREN's SYNDROME. tub.
URINE - ACRID - children; in – newborns med.
URINE - ACRID - newborn, in med.
Urine - ACRID, urine - newborn, in med.
Urine - retained in bladder - birth, at Acon. apis
Urine - RETENTION, of urine - babies, in - birth, at Acon. apis
Urine - RETENTION, of urine - babies, in - newborn infant, fails to urinate ACON.
Urine - RETENTION, of urine - birth, at Acon. apis
VISION - ACCOMMODATION - defective - diphtheria; after phys.
VISION - ACCOMMODATION - defective - headaches, with MAG-P. nat-m.
VISION - ACCOMMODATION - defective - infections, after phys.
VISION - ACCOMMODATION - defective - long standing pictures on retina anh.
VISION - ACCOMMODATION - defective - moving objects cocc.
VISION - ACCOMMODATION - defective - moving objects, for cocc.
VISION - ACCOMMODATION - defective – overexertion nux-v.
VISION - ACCOMMODATION, defective - action too great phys.
Vision - ACCOMMODATION, defective - approximation, of, far point sooner than near phys.
VISION - ACCOMMODATION, defective – diminished morph. phys. tab.
Vision - ACCOMMODATION, defective - long, standing images on retina anh.
Vision - ACCOMMODATION, defective - moving, objects, for cocc.
Vision - ACCOMMODATION, defective - near, point lasts longer than that of far point phys.
Vision - ACCOMMODATION, defective – overexertion calc. Nux-v. Ruta
Vision - ACCOMMODATION, defective – spastic agar. esin. ip. jab. lil-t. phys.
VISION - ACCOMMODATION, defective – tension Jab.
Bibliography

Encyclopedia Homoeopathica

Radar 10

Chapter 2. Embryology of the Urogenital System & Congenital Anomalies of the Genital Tract
CURRENT Diagnosis & Treatment: Obstetrics & Gynecology, 11e

Preterm Labor > Birth Defects Williams Obstetrics, 24e ...) Trial, it was found that birth defects were associated with preterm birth and low birth weight (Dolan...)

Chapter 45. The Aging Male > Paternal Age and Birth Defects and Disease in Offspring
Smith and Tanagho's General Urology, 18e ... the world. Paternal age has been the source of several studies of anatomic birth defects. One demonstrated...

Chapter 30. Blood Coagulation and Anticoagulant, Fibrinolytic, and Antiplatelet Drugs > Birth Defects Goodman & Gilman’s The Pharmacological Basis of Therapeutics, 12e ... Administration of warfarin during pregnancy causes birth defects and abortion. A syndrome...

Child Development & Behavior > D. Alcohol-Related Birth Defects CURRENT Diagnosis & Treatment: Pediatrics, 22e ... The diagnosis of alcohol-related birth defects requires a history of prenatal alcohol exposure...

Prenatal Care > Screening for Birth Defects CURRENT Diagnosis & Treatment: Family Medicine, 4e ... Down syndrome is the most common chromosomal abnormality encountered in a live birth...

The Newborn Infant > EXAMINATION AT BIRTH CURRENT Diagnosis & Treatment: Pediatrics, 22e ... Table 2–3. Infant evaluation at birth—Apgar score. a Score...

Chapter 38. Developmental Diseases of the Nervous System > Cranial Malformations at Birth and in Early Infancy Adams & Victor’s Principles of Neurology, 10e ... signify a pathologic process that affected the brain before birth or in early infancy. Because the size...
Preterm Labor > Late Preterm Birth Williams Obstetrics, 24e ... TABLE 42-5 Neonatal Morbidity Rates at Parkland Hospital in Live Births Delivered Late...

Genetics > Cardiac Defects Williams Obstetrics, 24e ... Structural cardiac anomalies are the most common birth defects, with a birth prevalence of 8...

Kidney & Urinary Tract > INHERITED OR DEVELOPMENTAL DEFECTS OF THE KIDNEYS CURRENT Diagnosis & Treatment: Pediatrics, 22e ... Table 24–6. Inherited or developmental defects of the urinary tract. Cystic...

Hernias & Other Lesions of the Abdominal Wall > CONGENITAL DEFECTS CURRENT Diagnosis & Treatment: Surgery, 14e ... Congenital defects of the abdominal wall other than hernias or lesions of the urachus...

Diarrhea and Constipation > CONGENITAL DEFECTS IN ION ABSORPTION Harrison's Principles of Internal Medicine ... birth. These disorders include defective Cl – /HCO 3 – exchange (congenital chloridorrhea...

Teratology, Teratogens, and Fetotoxic Agents > Introduction Williams Obstetrics, 24e ... Trastuzumab Tretinoin Valproic acid Warfarin Birth defects are common—2 to 3...

Genetics & Dysmorphology > Environmental Factors CURRENT Diagnosis & Treatment: Pediatrics, 22e ... regulated pathways. At the cellular level, xenobiotics (compounds foreign to nature) cause birth defects...

Multifetal Pregnancy > Congenital Malformations Williams Obstetrics, 24e ... availability of ART. An increase in birth defects related to ART has been reported repeatedly (Talauliker...
Female Reproductive Toxicology > A. Study Designs CURRENT Diagnosis & Treatment: Occupational & Environmental Medicine, 5e ..., birth defects or childhood cancers). Because the outcome of interest is specified at the onset...

Chapter 22. Neonatal Resuscitation > The Dysmorphic Infant CURRENT Diagnosis & Treatment: Obstetrics & Gynecology, 11e

... allow for early diagnosis of many congenital birth defects or diseases, but many are still difficult...