

KARYOTYPES

(use with PowerPoint Presentation)

AMNIOCENTESIS

A _____ is inserted into the _____ sac and some amniotic _____ is removed. This fluid contains some _____ that have been shed by the baby.

PREPARING A KARYOTYPE

The baby's _____ are broken apart and spun in a _____ which separates the nucleus from other organelles. The nucleus is then examined and _____ are photographed.

CHROMOSOMES

This is how chromosomes look when they have already replicated and are joined by a _____. Note the fine coiled strands of _____.

HUMAN KARYOTYPE

The chromosomes have been photographed, cut out and arranged in order of _____, _____ and _____ patterns into 4 rows. The _____ chromosomes are last.

GORILLA AND RAT KARYOTYPE

Karyotypes of other animals can also be prepared. Note the different number of _____ compared to humans. Gorillas (apes) have _____ and rats have _____ than we do.

ABNORMAL HUMAN KARYOTYPE

Examine the karyotype and try to find the chromosome abnormality. Many abnormal karyotypes show _____ or _____ than the proper number of chromosomes.

DOWN SYNDROME (TRISOMY ___)

In Down Syndrome, the baby has an _____ chromosome # _____ (there are 3 instead of 2). This is an example of a _____ - _____ disorder.

EDWARD'S SYNDROME (TRISOMY _____)

In Edward's Syndrome, the baby has an _____ chromosome # _____ (there are 3 instead of 2). This is an example of a non-disjunction disorder.

PATAU'S SYNDROME (TRISOMY _____)

In Patau's Syndrome, the baby has an _____ chromosome # _____ (there are 3 instead of 2). This is an example of a non-disjunction disorder.

KLINFELTER'S SYNDROME (TRISOMY _____)

In Klinefelter's Syndrome, the baby has an extra _____ chromosome (there are 2 instead of 1). This is an example of a non-disjunction disorder.

TURNER'S SYNDROME (MONOSOMY _____)

In Turner's Syndrome, the baby is _____ a _____ chromosome (there is 1 instead of 2). This is an example of a non-disjunction disorder.

CAUSES OF ABNORMAL KARYOTYPES

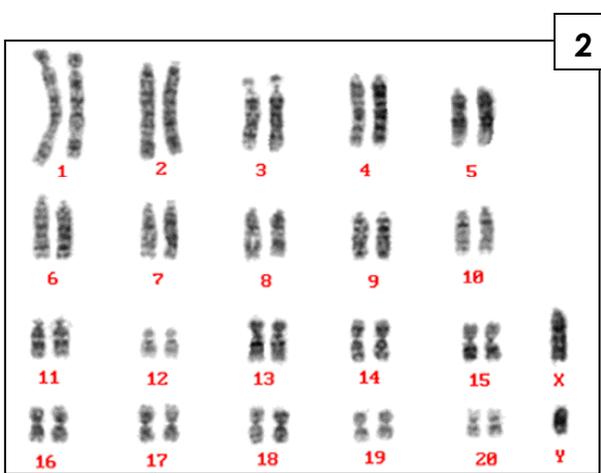
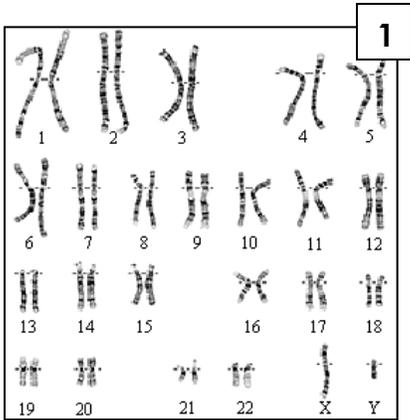
(1) Non-Disjunction Disorders

- chromosomes don't properly _____ into daughter cells
- _____ receive more or less chromosomes than normal

ie. Trisomy 13, 18, 21 / Monosomy X0 / Trisomy XXY

(2) Chromosome Breaks

- a piece of the chromosome is lost (_____ mutation)
- piece may attach to another chromosome (_____ mutation)



KARYOTYPES:

1. NORMAL HUMAN
2. RAT
3. DOWN SYNDROME
4. PATAU'S SYNDROME
5. EDWARD'S SYNDROME
6. KLINEFELTER'S SYNDROME
7. TURNER'S SYNDROME

