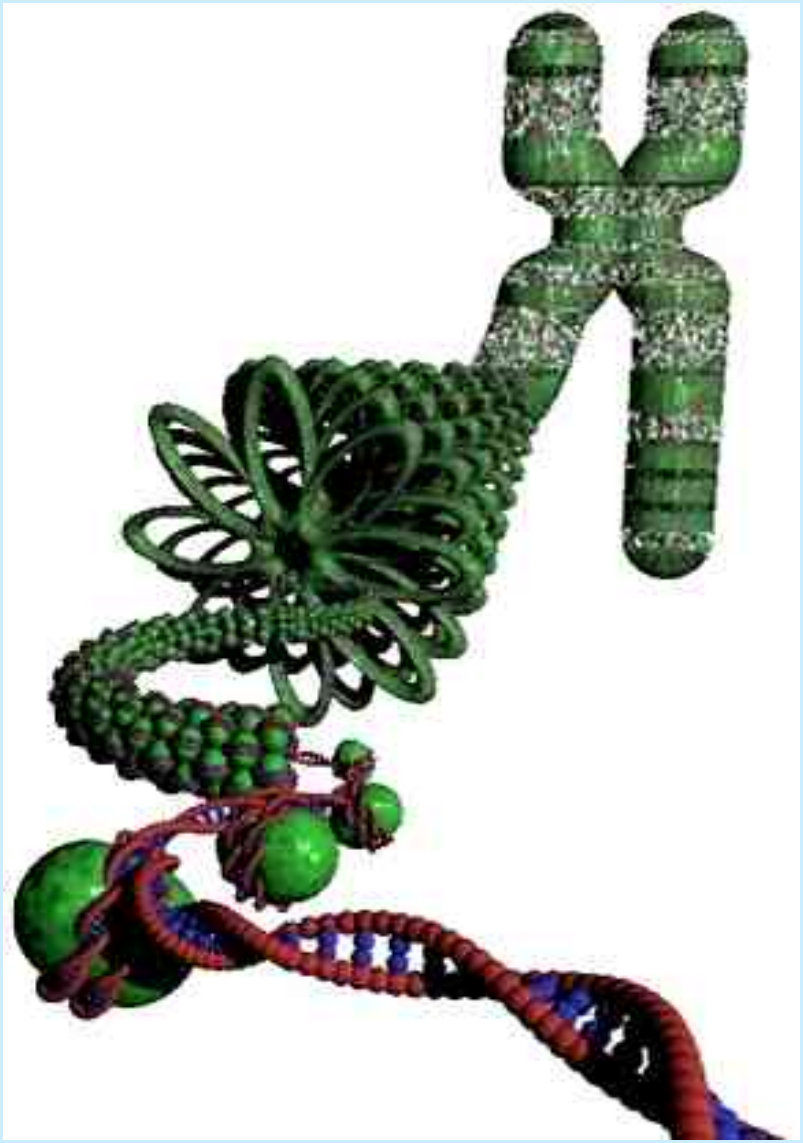
HUMAN KARYOTYPE

DNA CONDENSATION



CHROMOSOME MORPHOLOGY

METACENTRIC

SISTER CHROMATIDS

SUBMETACENTRIC

SHORT ARMS (p)

TELOMERE

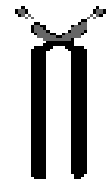
CENTROMERE

LONG ARMS (q)

TELOMERE

ACROCENTRIC

SATELLITES



SAMPLES FOR CHROMOSOMAL ANALYSIS

PRENATAL DG.:

- amniotic fluid (amniocytes)
- fetal blood
- chorionic villi

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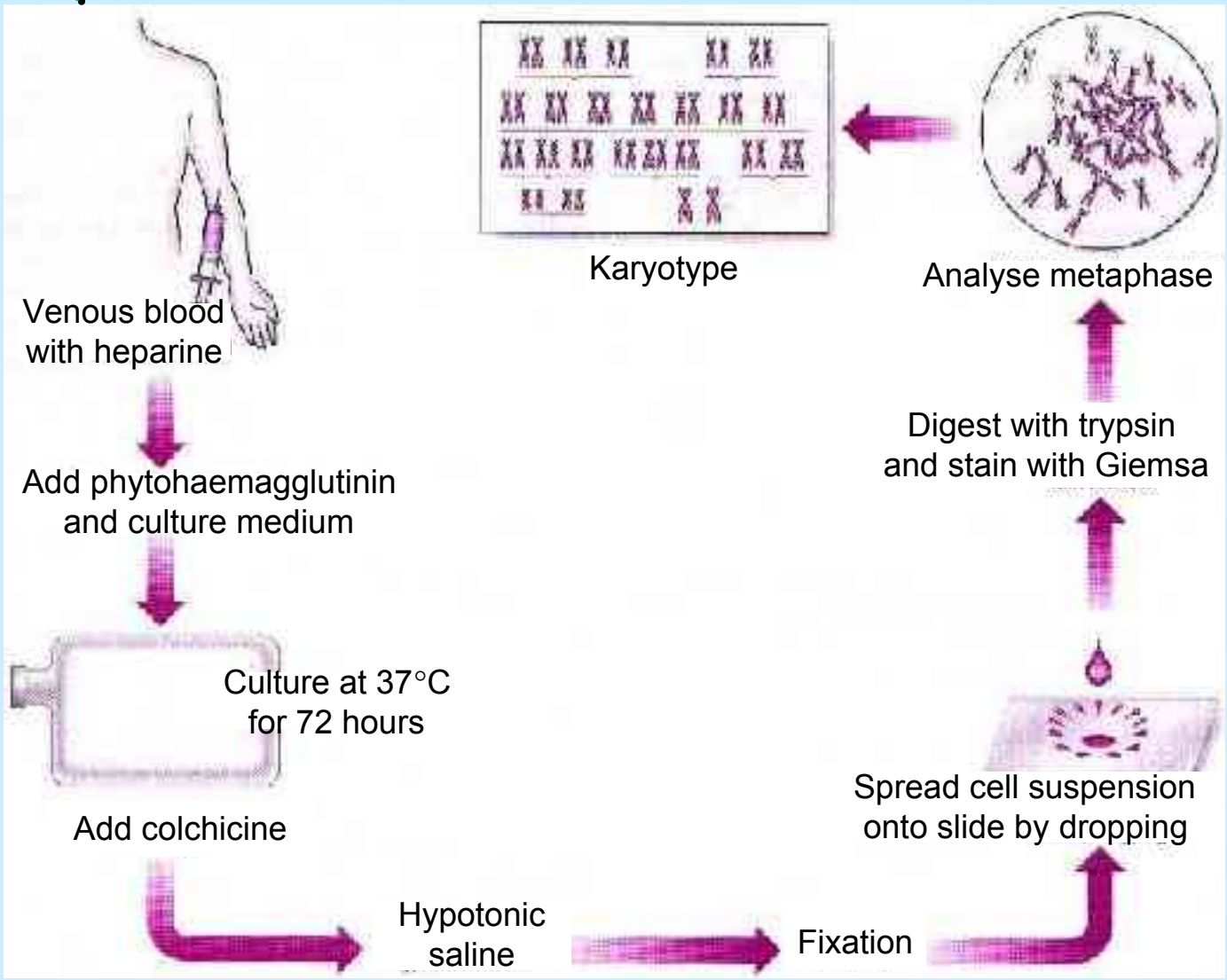
- umbilical cord and other embryonal or fetal tissues

POSTNATAL DG.:

- peripheral blood (lymphocytes)
- bone marrow
- skin (fibroblasts)
- carcinoma samples
- other tissues

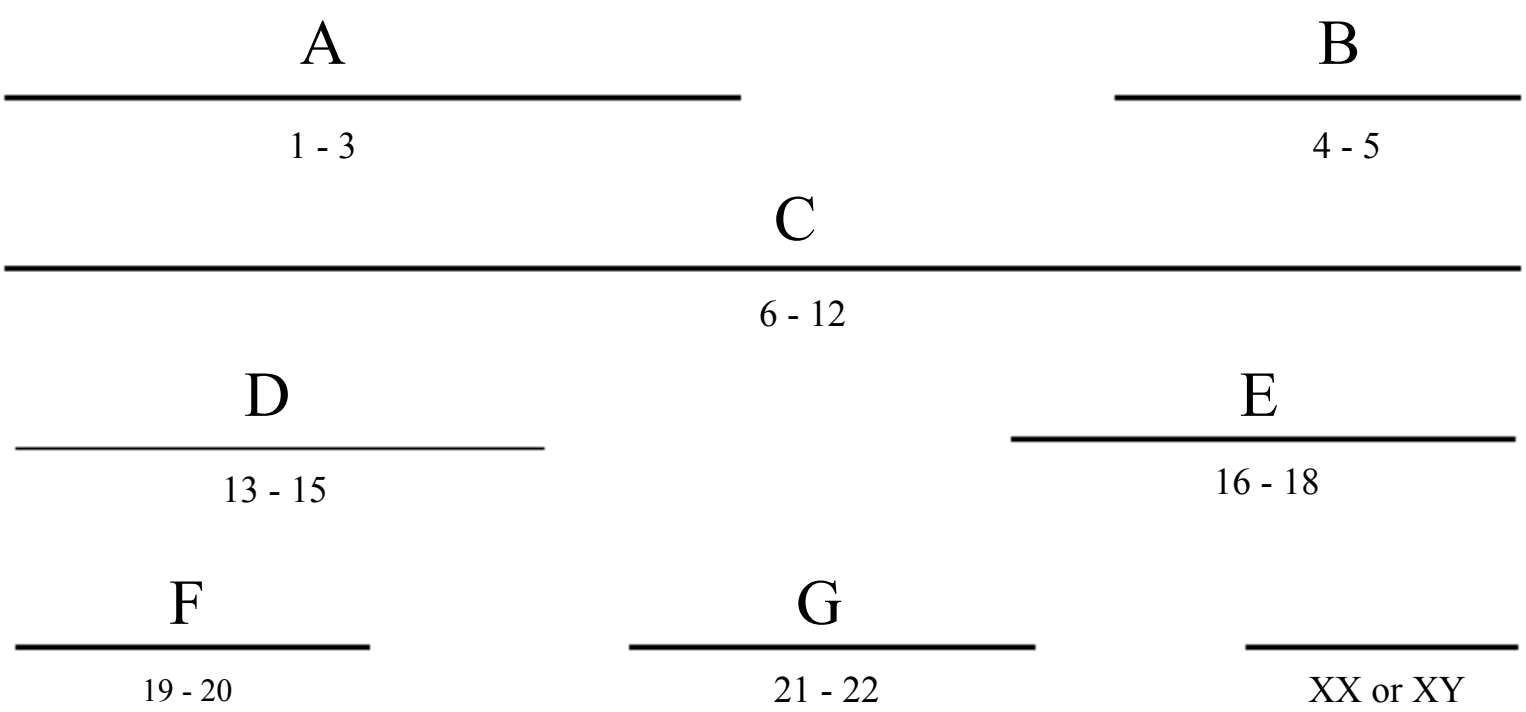
CYTOGENETIC ANALYSIS

Peripheral blood



HUMAN KARYOTYPE

- 7 groups - depending on the lenght and morphology
- 22 pairs of homologous chromosomes - autosomes
- 1 pair of sex chromosomes

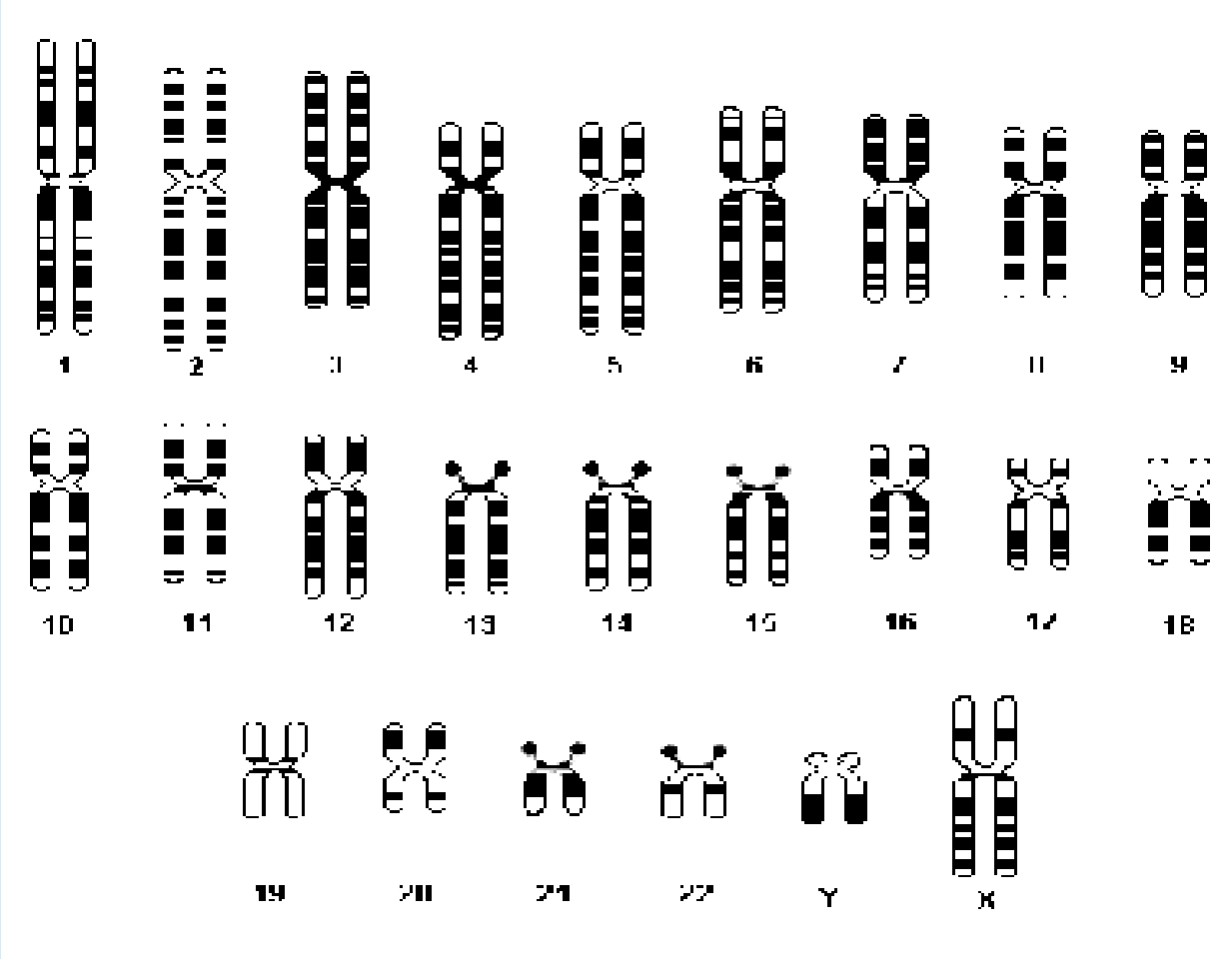


HUMAN KARYOTYPE

Chromosome groups characteristics

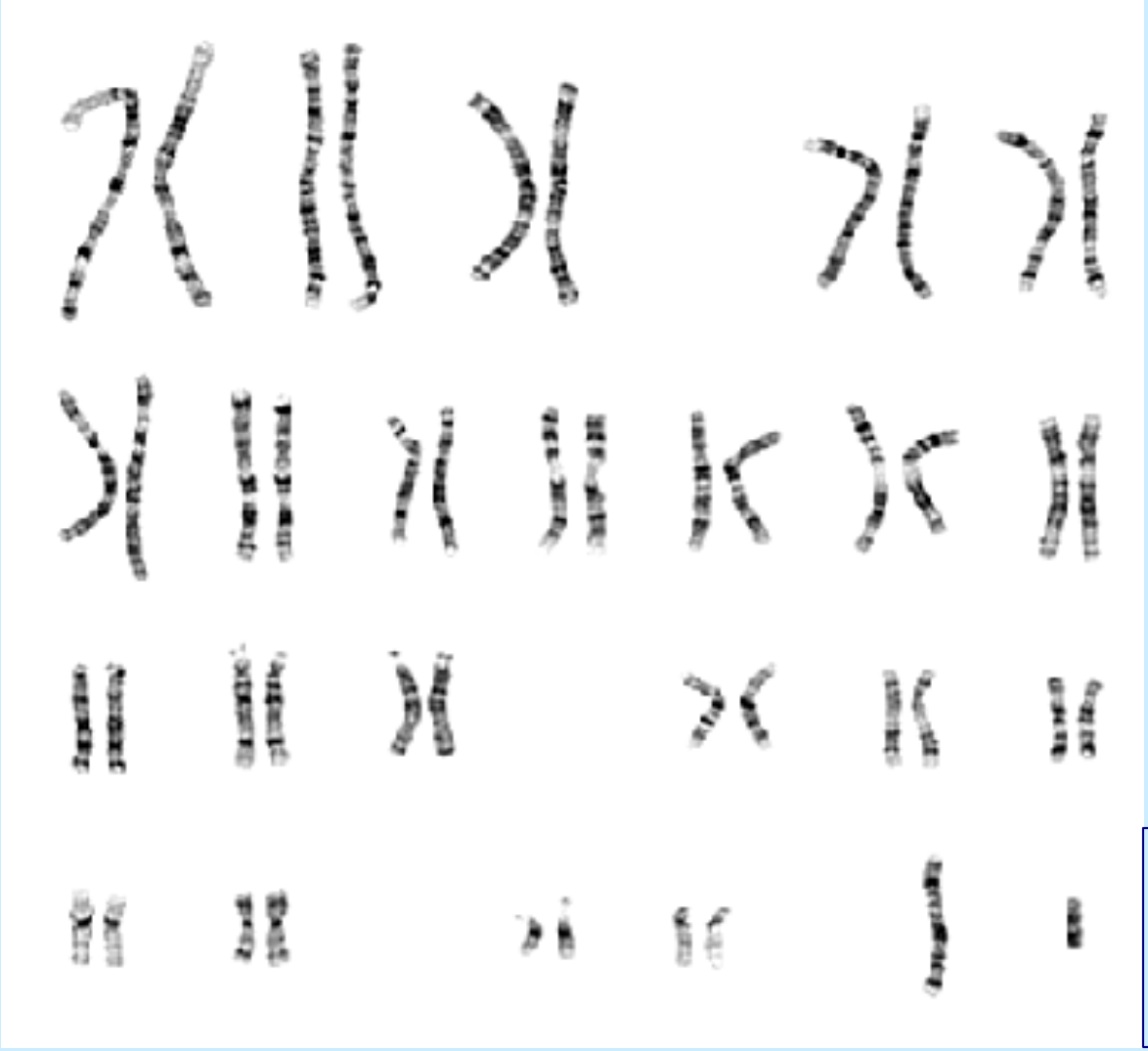
Group	Chromosomes	Size and Shape
A	1 - 3	Large metacentric
B	4 and 5	Large submetacentric
C	6 - 12 and X	Medium submetacentric
D	13 - 15	Medium acrocentric
E	16 - 18	Short submetacentric
F	19 and 20	Short metacentric
G	21 and 22 and Y	Short acrocentric

G - BANDING PATTERNS



METAPHASE

KARYOTYPE



46,XY

FEMALE KARYOTYPE