

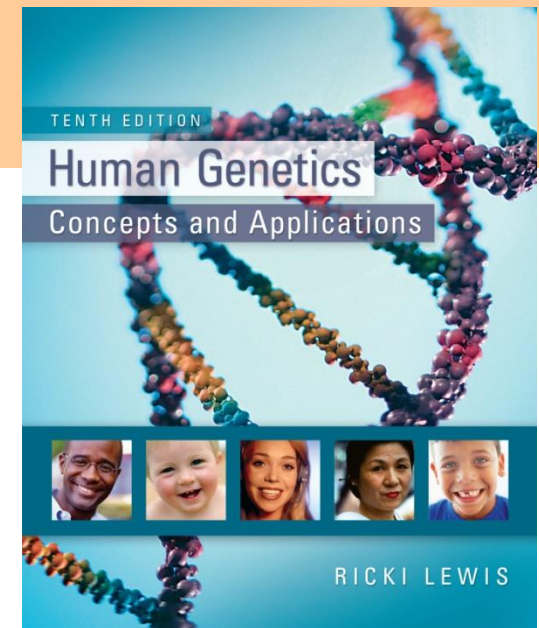
Human Genetics

Concepts and Applications

Preview from Notesale.co.uk
Page 1 of 61

Tenth Edition
RICKI LEWIS

13 Chromosomes



PowerPoint® Lecture Outlines
Prepared by Johnny El-Rady, University of South Florida

Portrait of a Chromosome

A chromosome consists primarily of DNA and protein

Distinguished by size and shape

Essential parts are:

- Telomeres
- Origins of replication sites
- Centromere

Portrait of a Chromosome

Copyright © The McGraw-Hill Companies, Inc. Permission required for reproduction or display.

Sister chromatids

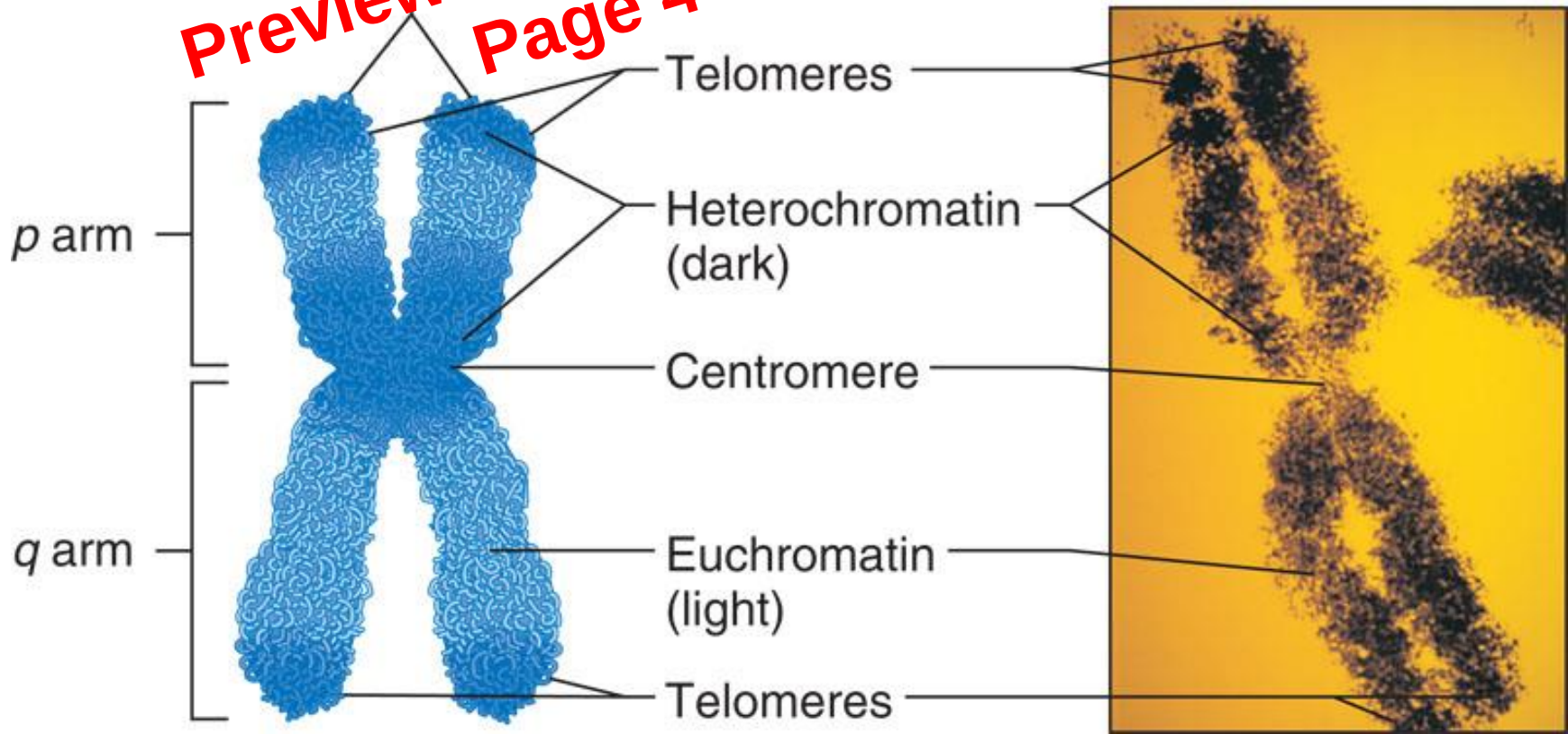


Figure 13.1

Karyotype

Copyright © The McGraw-Hill Companies, Inc. Permission is required for reproduction or display.

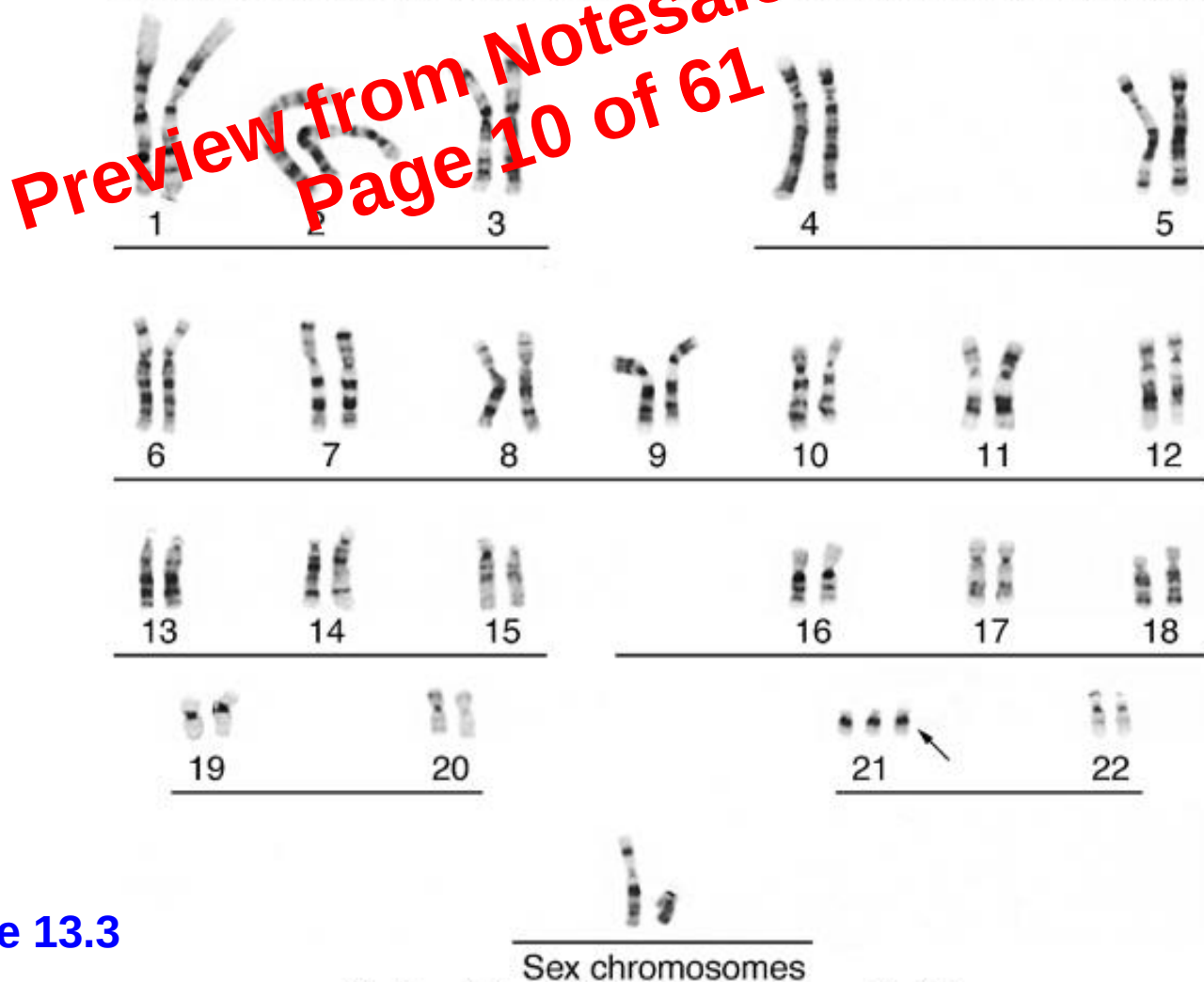


Figure 13.3

Courtesy National Human Genome Research Institute

FISH

Fluorescence *in situ* hybridization

DNA probes labeled with fluorescing dye bind complementary DNA

Copyright © The McGraw-Hill Companies, Inc. Permission required for reproduction or display.



© Courtesy Genzyme Corporation

Fluorescent dots correspond to three copies of chromosome 21

Figure 13.9

Ideogram

A schematic
chromosome map

Indicates chromosome
arms (p or q) and
delineates major
regions and
subregions by
numbers

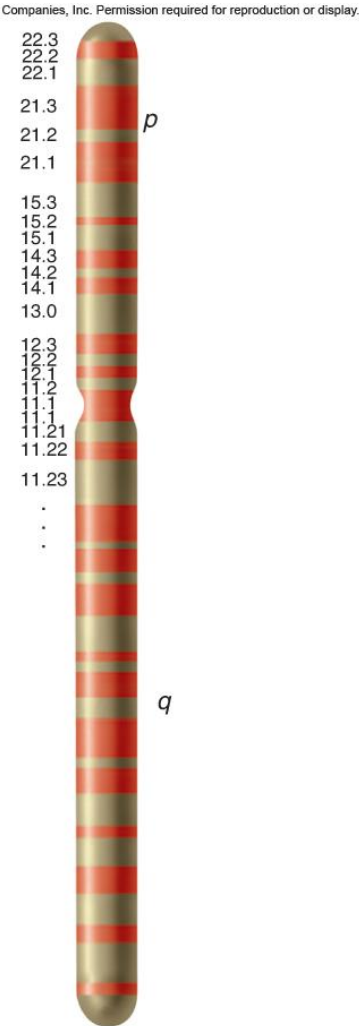


Figure 13.10

Trisomy 18

Edwards syndrome

Preview from Notesale.co.uk
Page 35 of 61

Figure 13.14a

Copyright © The McGraw-Hill Companies, Inc. Permission required for reproduction or display.



a.

Most due to nondisjunction
in meiosis II in oocyte
and do not survive

Serious mental and physical disabilities
A distinctive feature: Oddly-clenched fists

Chromosome Structural

Copyright © The McGraw-Hill Companies, Inc. Permission is required for reproduction or display.

Preview from Notesale.co.uk
Page 43 of 61



a. Normal sequence of genes



b. Deleted sequence of genes



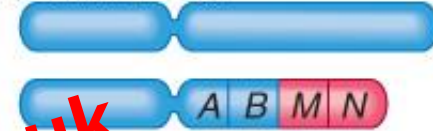
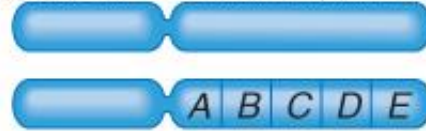
c. Duplicated sequence of genes



d. Inverted sequence of genes

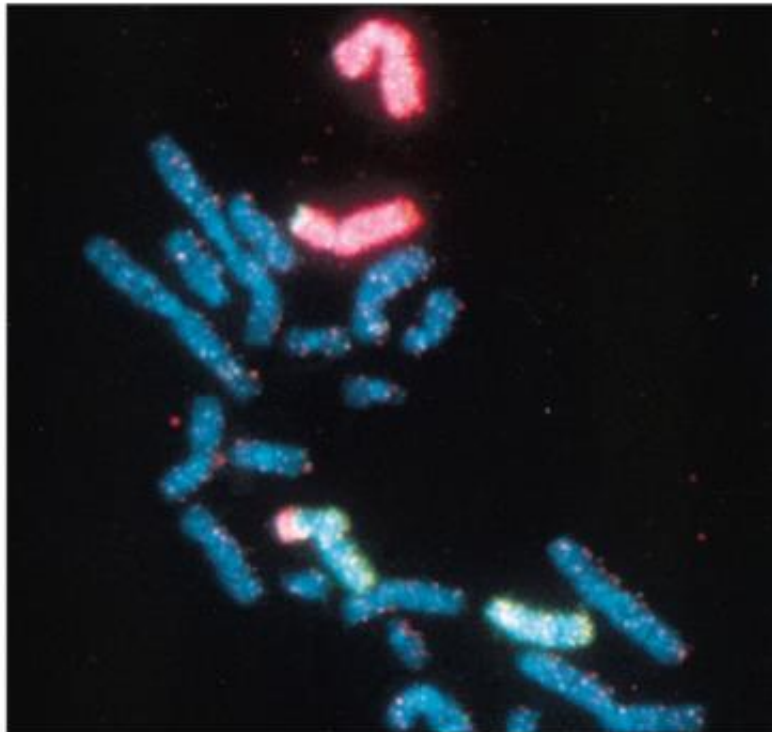
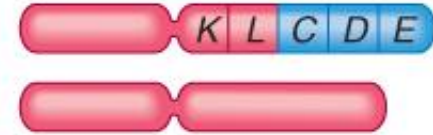
Figure 13.15

Homologous
chromosomes



Reciprocal
translocation

Homologous
chromosomes



b.

Figure 13.19

Uniparental Disomy

Copyright © The McGraw-Hill Companies, Inc. Permission required for reproduction or display.

Preview from Notesale.co.uk
Page 61 of 61

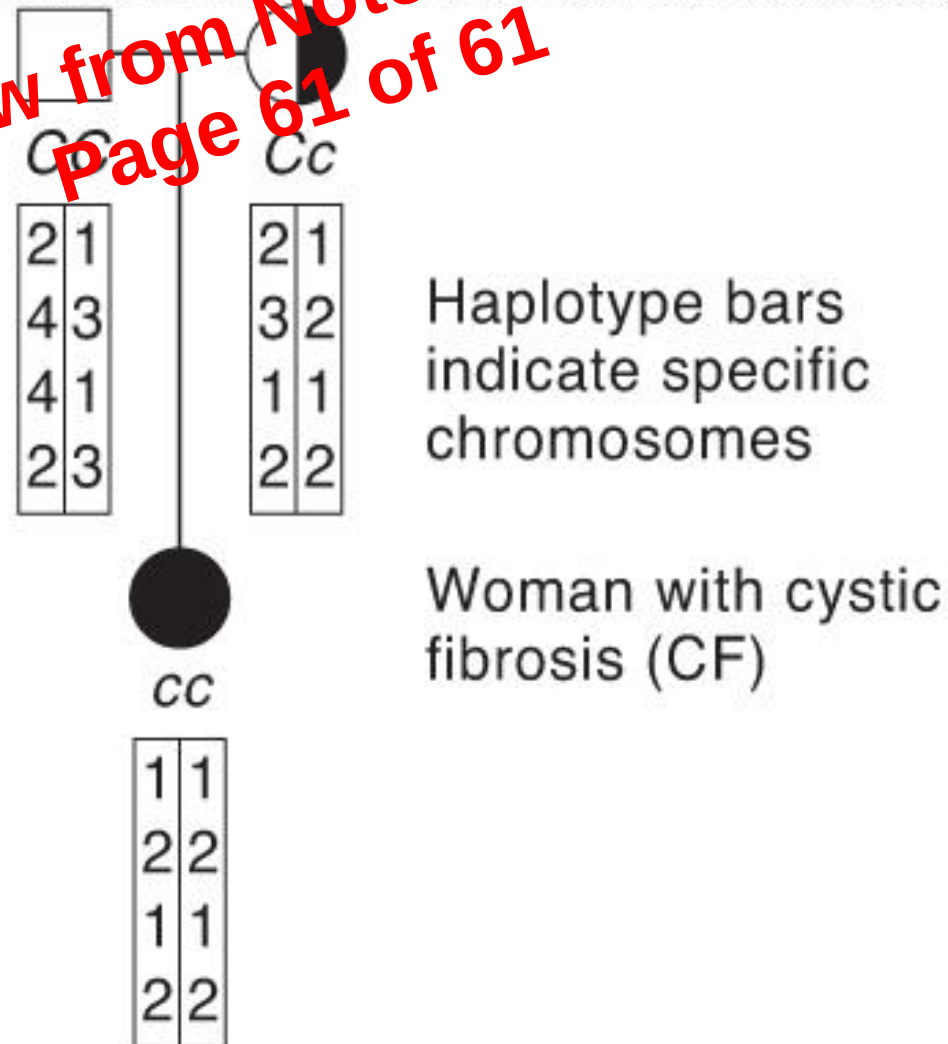


Figure 13.24