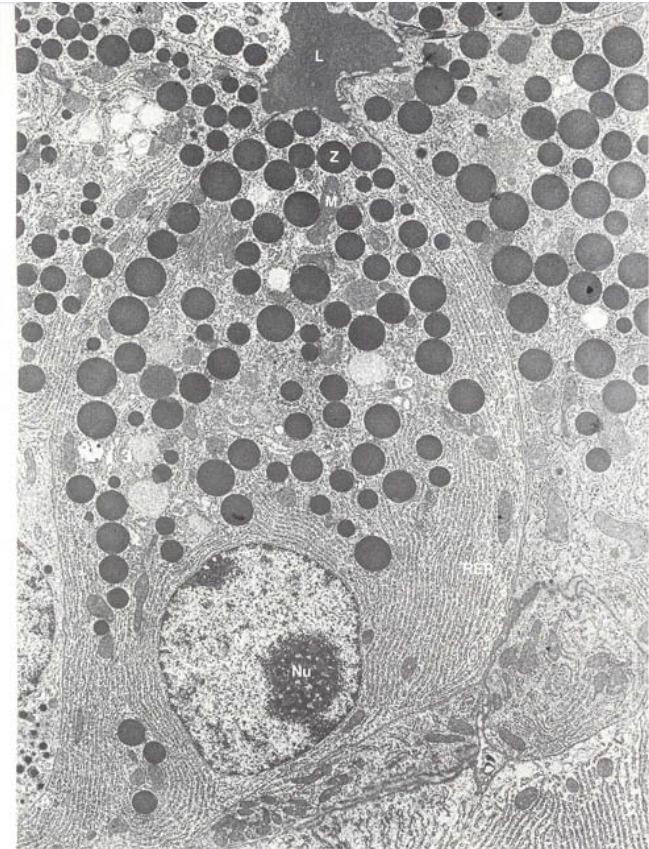


Immagini Microscopia elettronica

✚ **Cellula ad intensa sintesi di proteine di secrezione** (es. cellule ghiandolari)

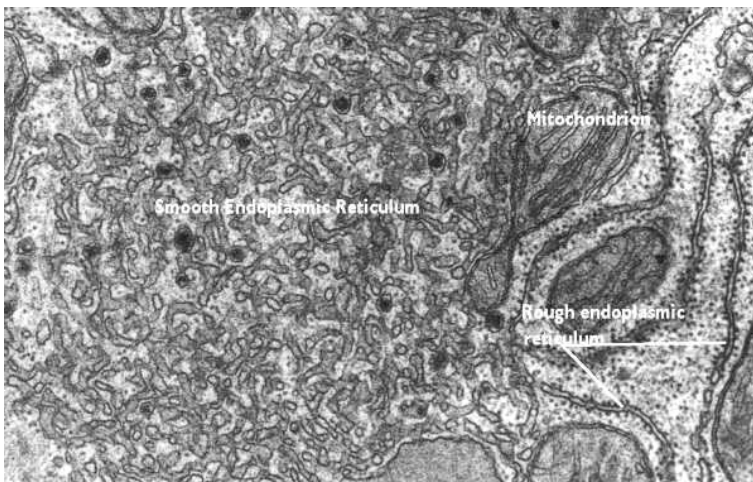
Cellula pancreatica



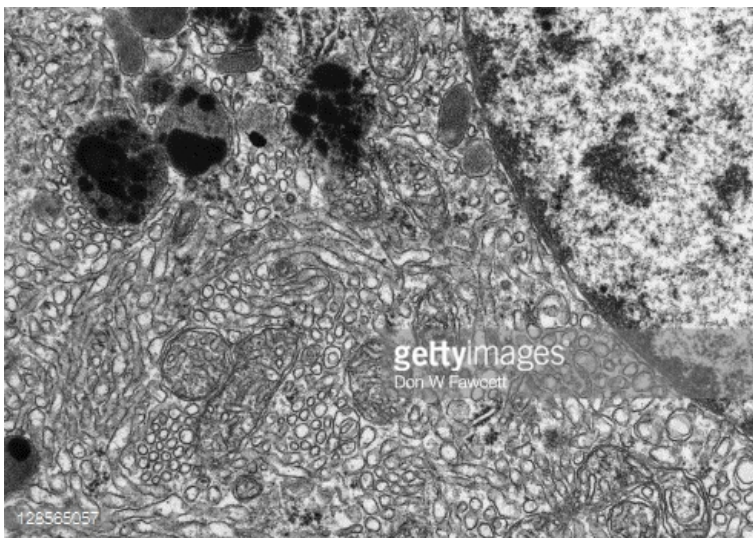
http://www.visualhistology.com/DEV/products/atlas/VisualHistology_Atlas_2-0-19_1.jpg

✚ **Cellula ad intensa sintesi di ormoni steroidei (reticolo liscio)** (es. cellula di Leydig del testicolo che secreta testosterone)

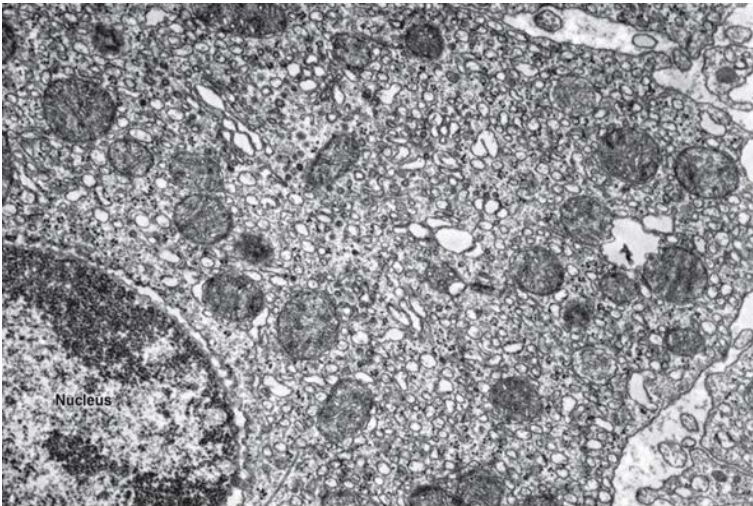
<https://images.rapgenius.com/3b8821fed3190ddb9d791f40fa98f061.640x480x1.gif>



<http://classes.kumc.edu/som/cellbiology/organelles/smoothier/images/nr26.jpg>



<http://cache4.asset-cache.net/gc/128565057-transmission-electron-micrograph-of-a-human-gettyimages.jpg?v=1&c=IWSAsset&k=2&d=N8fdWIR9FzBcjXzIRRDSHXBC6XeO0ijBzR6QMzBfsm4sTtbG8XRWehdQJPAGesSV>



<http://4.bp.blogspot.com/w28CyahIj5w/TkRliJeZ9SI/AAAAAAAAAET0/YqcokHlqc5Q/s1600/Electron%2Bmicrograph%2Bof%2Ba%2Bsection%2Bof%2Ban%2Binterstitial%2Bcell.png>

✚ **Cellula con ampio serbatoio di calcio (reticolo sarcoplasmatico /reticolo liscio) (es. cellula muscolare scheletrica)**

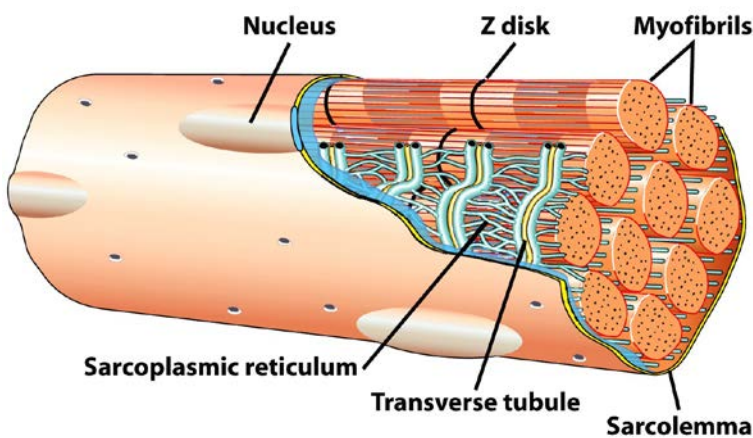
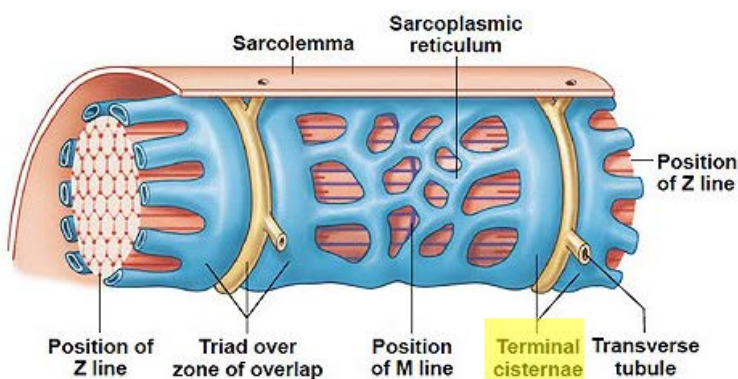
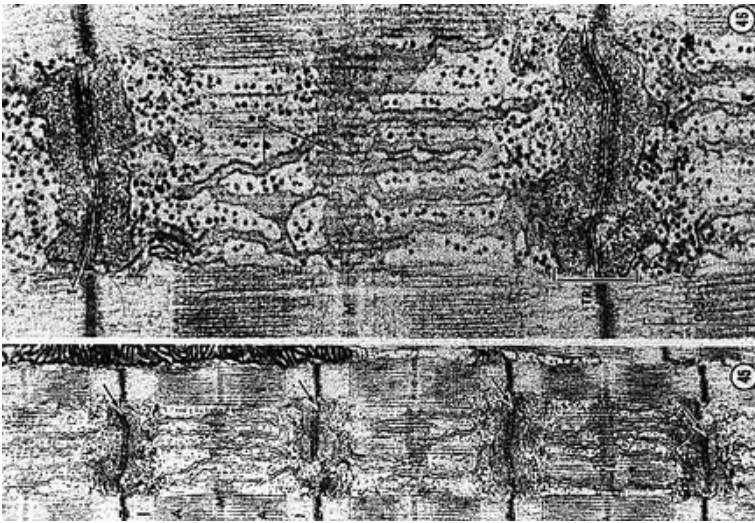


Figure 17-32a
Molecular Cell Biology, Sixth Edition
© 2008 W.H. Freeman and Company

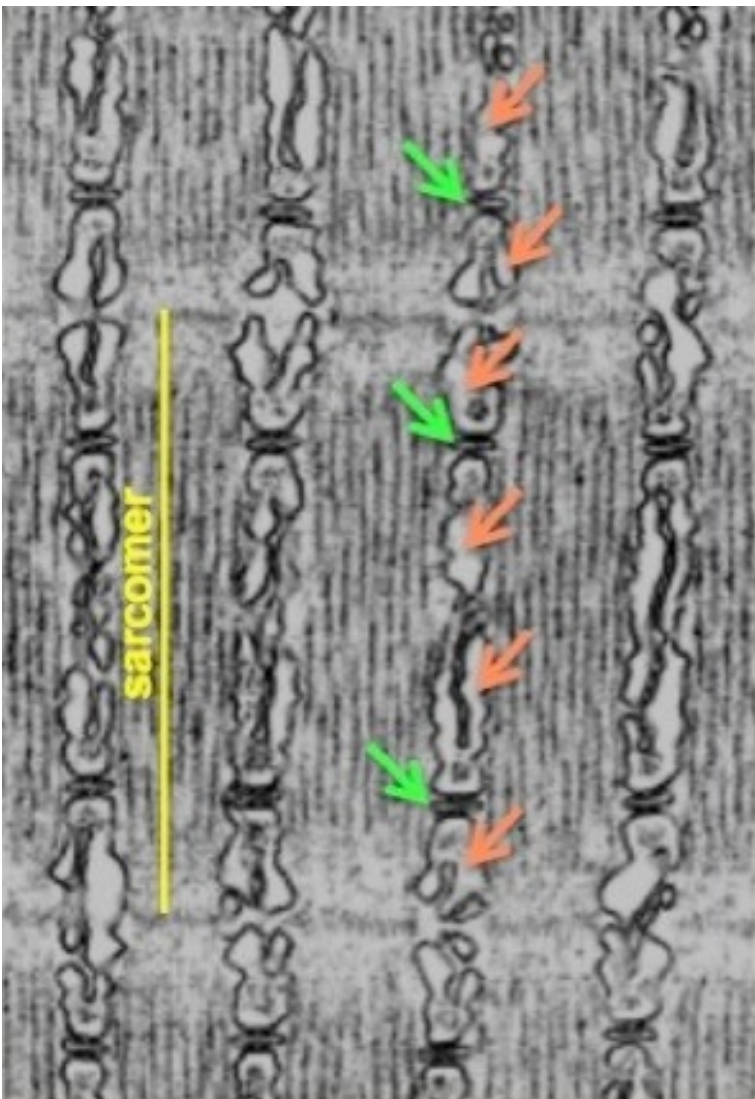
<http://www.bio.miami.edu/tom/courses/protected/MCB6/ch17/17-32a.jpg>



https://s3.amazonaws.com/rapgenius/terminal_cisternae1309323455828.png



http://www.downstate.edu/histology_lab_manual/slides/big/em_05_16.jpg

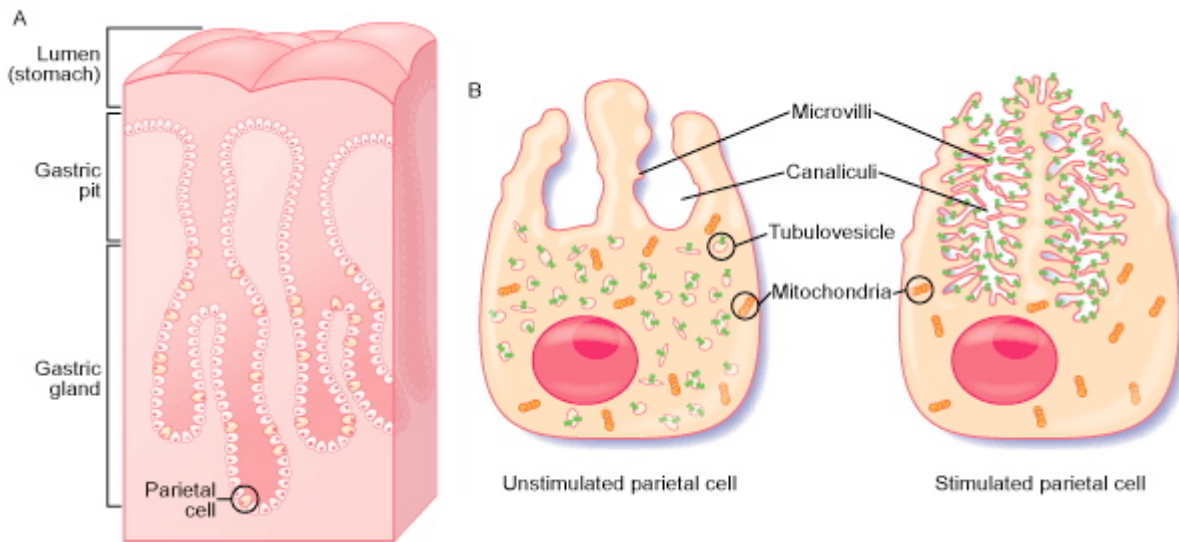


http://www.efelder.de/EC-coupling_files/TEM%20OV.jpg

- ✚ **Cellula che necessita di molta energia** (es. Per la contrazione ininterrotta: cellula muscolare cardiaca; per l'estrusione di acido cloridrico: cellula parietale stomaco; cellula dei tubuli distali del rene: controllo della concentrazione di Na^+ e K^+ nel sangue)

Cellule muscolo cardiaco: vedi sotto

Cellula parietali dello stomaco

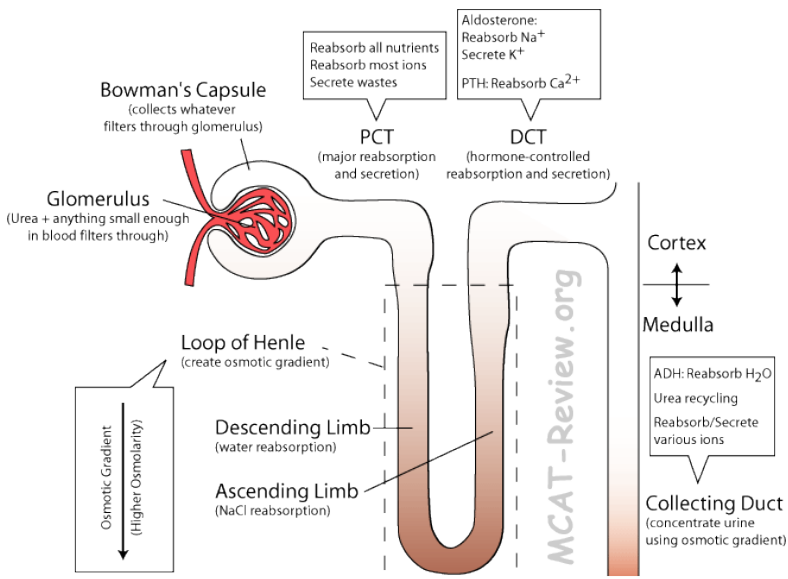


<https://mutagenetix.utsouthwestern.edu/phenotypic/pfile.cfm/1448/background2-b.jpg>

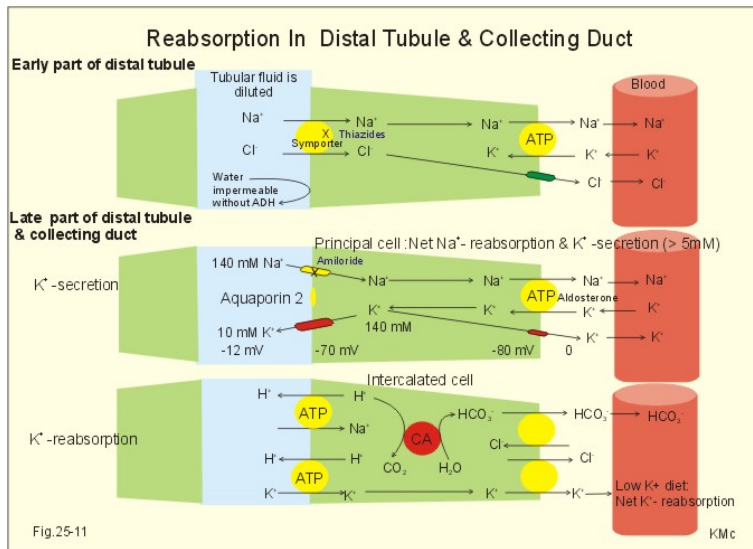


http://www.columbia.edu/itc/hs/medical/sbpm_histology_old/micrographs/53.jpg

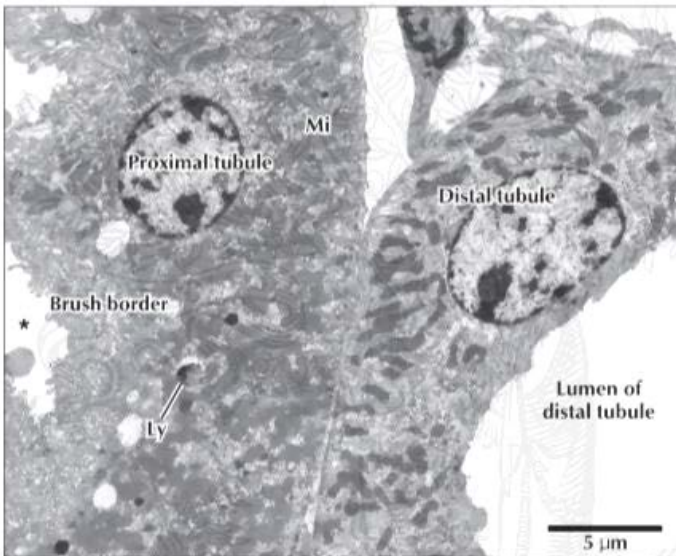
Cellule dei tubuli renali



<http://mcat-review.org/nephron.gif>



<http://www.zuniv.net/physiology/book/images/25-11.jpg>



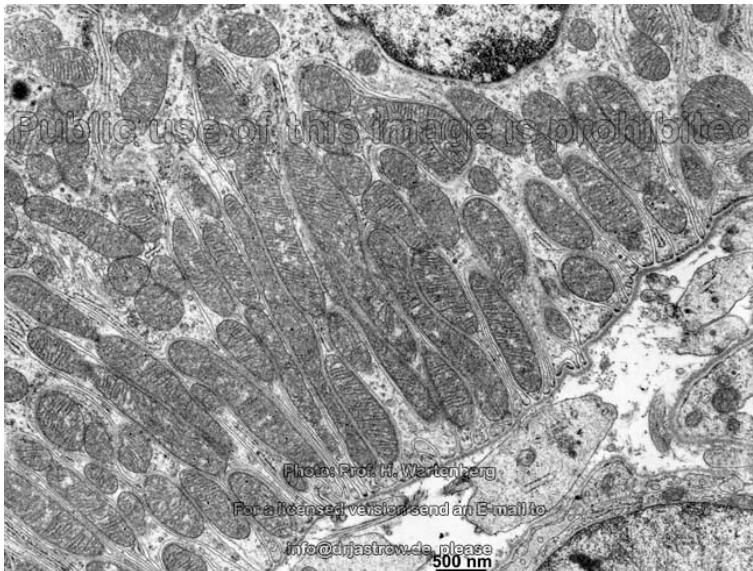
Electron micrograph of parts of proximal and distal convoluted tubules. Proximal tubule cells are usually more robust in size and in content of organelles and surface specializations than distal tubule cells. An elaborate apical brush border protrudes into the lumen (*) of the proximal tubule; distal tubule cells lack a brush border. Mitochondria (Mi) and lysosomes (Ly) are larger and more numerous in the proximal tubule, and lateral cell borders are indistinct in both. Cells of both tubules have round euchromatic nuclei. 4000 \times .

© Elsevier Inc. - Netterimages.com

Image No. 14606

© ELSEVIER, INC. - NETTERIMAGES.COM

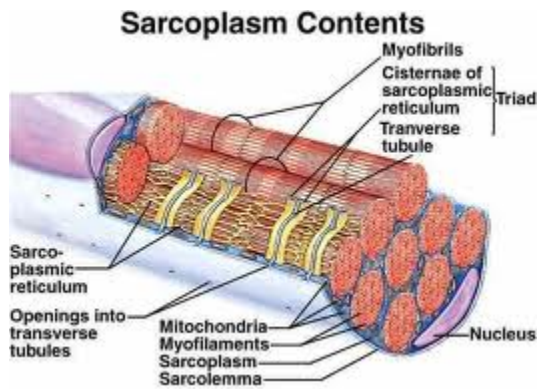
<https://www.netterimages.com/images/vpv/000/000/014/14606-0550x0475.jpg>



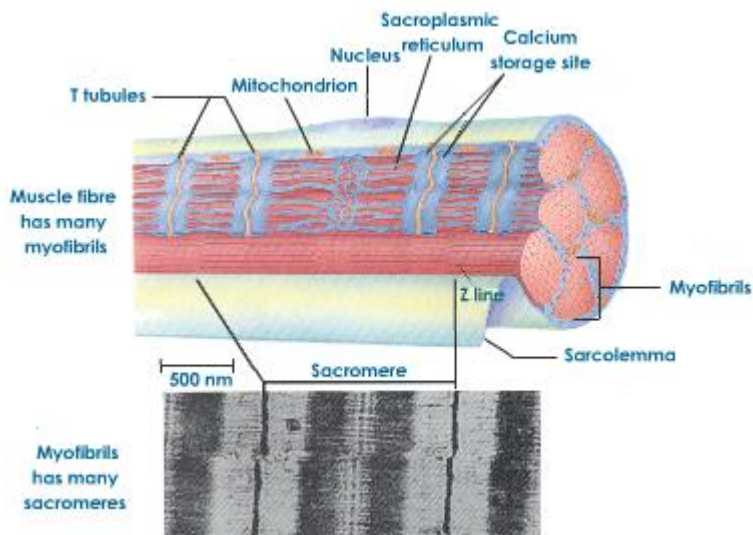
<https://www.uni-mainz.de/FB/Medizin/Anatomie/workshop/EM/externes/Wartenberg/Niere29.jpg>

- ✚ **Cellula specializzata per la contrazione** (es. cellula muscolare scheletrica, cardiaca, liscia)

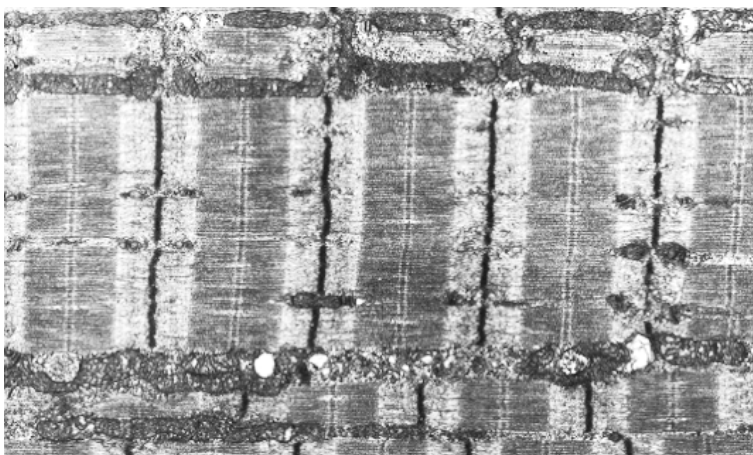
Muscolo scheletrico



http://www.proprofs.com/quiz-school/user_upload/ckeditor/sarcoplasm%20muscle.jpg

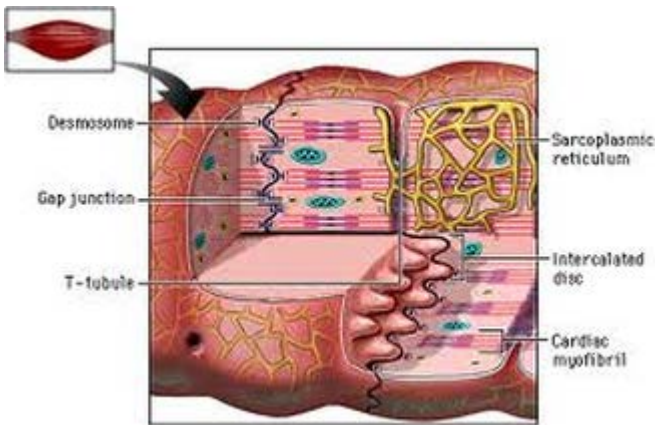


<http://images.tutorvista.com/content/locomotion-animals/skeletal-muscle-structure.jpeg>

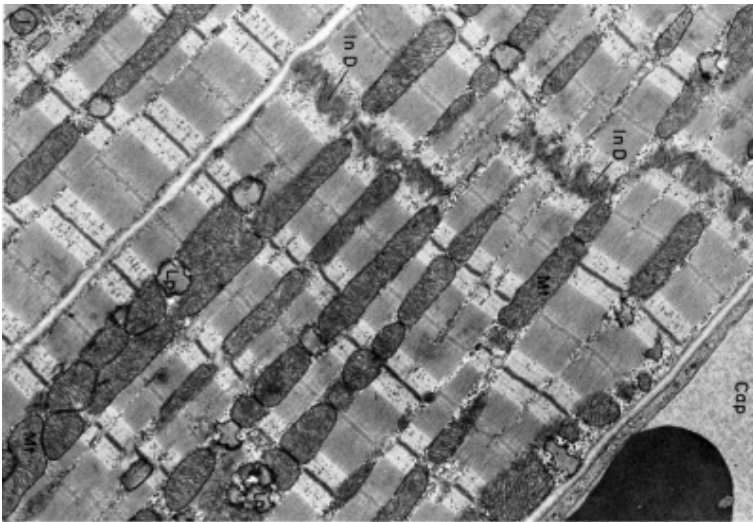


http://homepage.smc.edu/wissmann_paul/physnet/anatomynet/anatomy/skeletalmuscleEM.gif

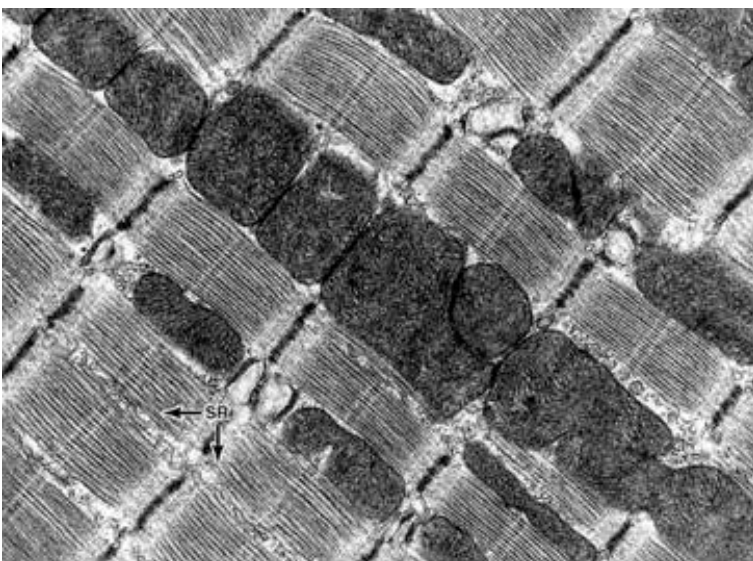
Muscolo cardiaco



<http://learnmuscularsystem.weebly.com/uploads/1/5/3/1/15317104/2939275.png?325>

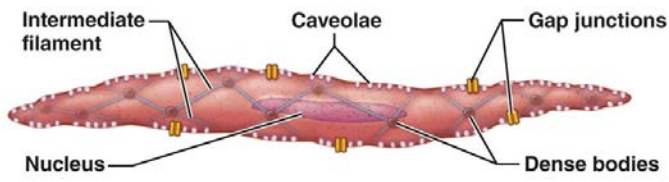


https://embryology.med.unsw.edu.au/embryology/images/thumb/c/c1/Cardiac_muscle_EM01.jpg/400px-Cardiac_muscle_EM01.jpg

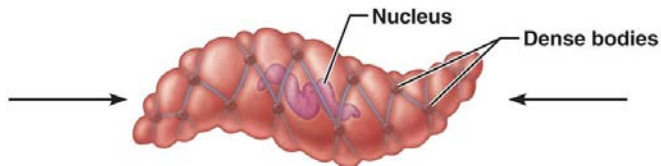


http://intranet.tdmu.edu.ua/data/kafedra/internal/histolog/classes_stud/en/med/lik/ptn/1/08%20Chondroid%20tissue.%20Bony%20tissue.%20Muscular%20tissues..files/image103.jpg

Muscolo liscio



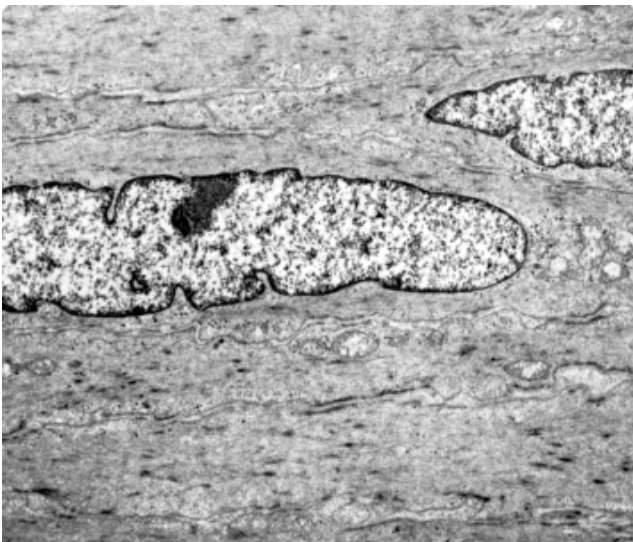
(a) Relaxed smooth muscle fiber (note that gap junctions connect adjacent fibers)



(b) Contracted smooth muscle fiber

© 2012 Pearson Education, Inc.

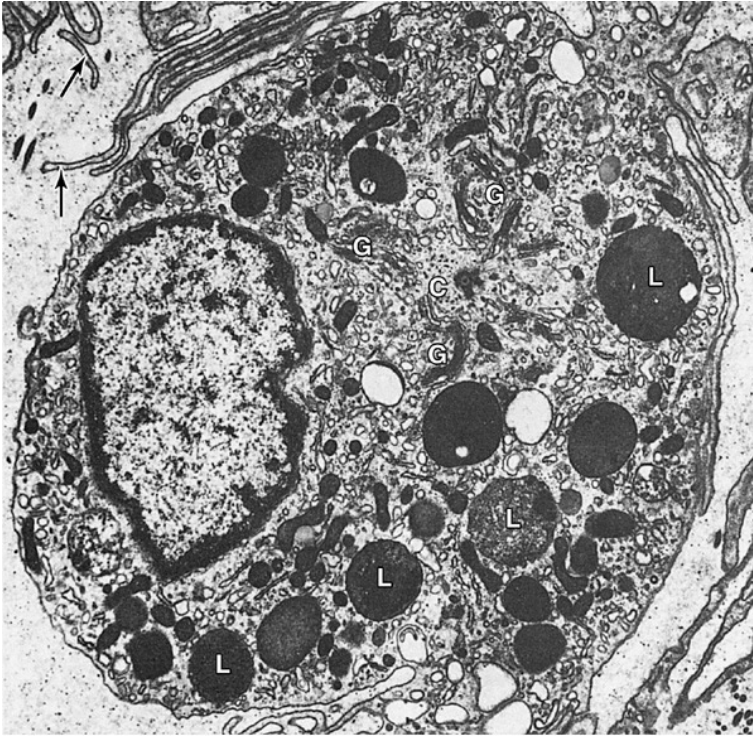
http://classes.midlandstech.edu/carterp/Courses/bio210/chap09/210_figure_09_27_labeled.jpg



<http://www.nature.com/ajg/journal/v99/n10/images/ajg2004368f4.gif>

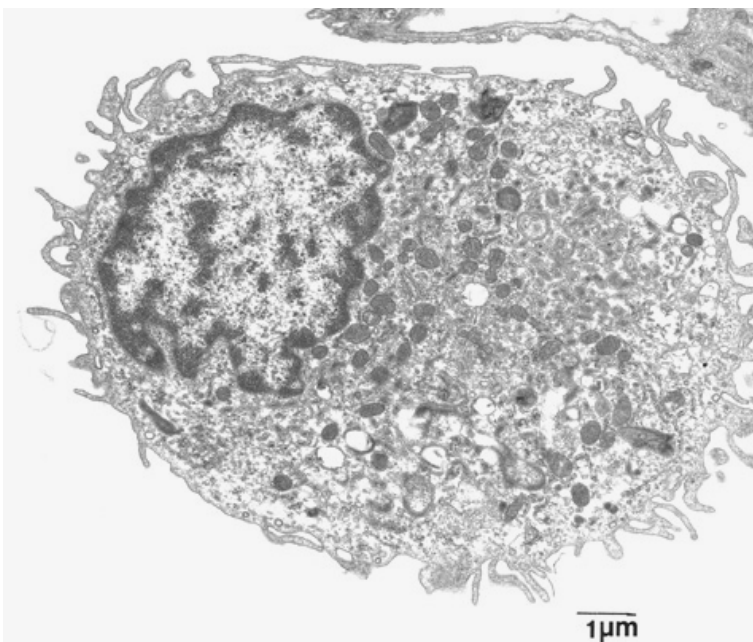
Cellula specializzata per la fagocitosi (es. macrofago)

Electron micrograph of a macrophage. Note the abundant cytoplasmic extensions (arrows). In the center is a centriole (C) surrounded by Golgi cisternae (G).



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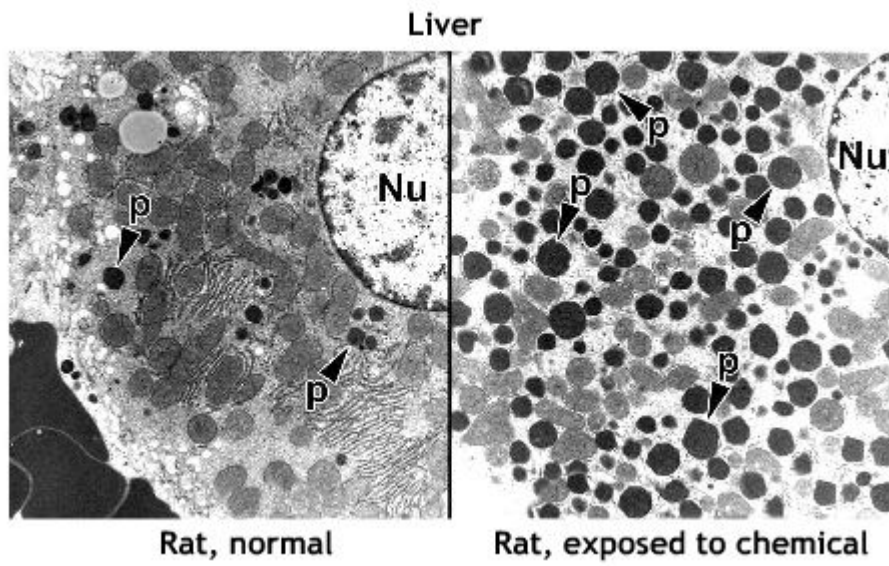
http://2.bp.blogspot.com/-fqSLc6j2-JA/TgCUFLmrpyI/AAAAAAAAAJs/o_6UpsMNsYc/s1600/Figure+2-25.bmp



Mouse lung macrophage

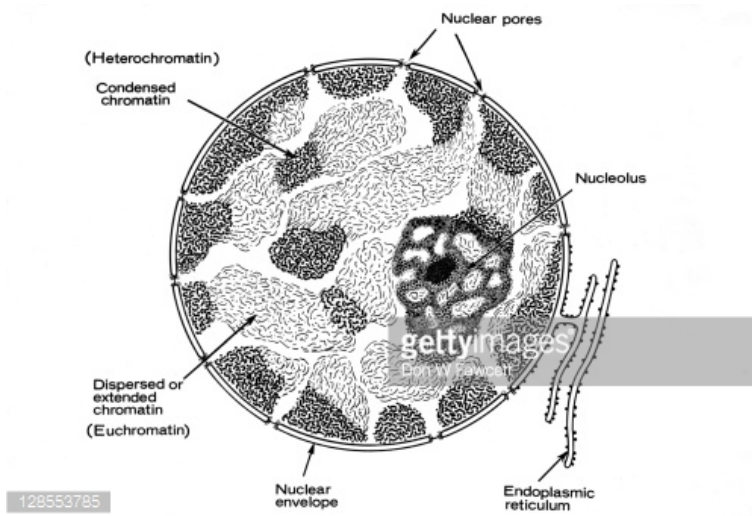
http://www.kumc.edu/images/emrl/atlas/ct5_mouse_macrophage_685309.jpg

- ✚ **Cellula attivamente impegnata in processi di ossidazione di lipidi in eccesso**
(es. epatocita intossicato da farmaci ipolipidemici)

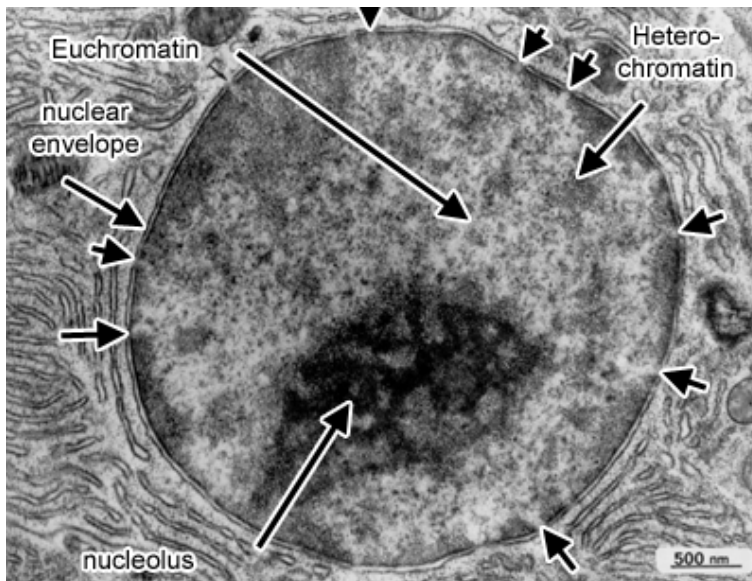


https://toxlearn.nlm.nih.gov/htmlversion/images/module2/4_12.jpg

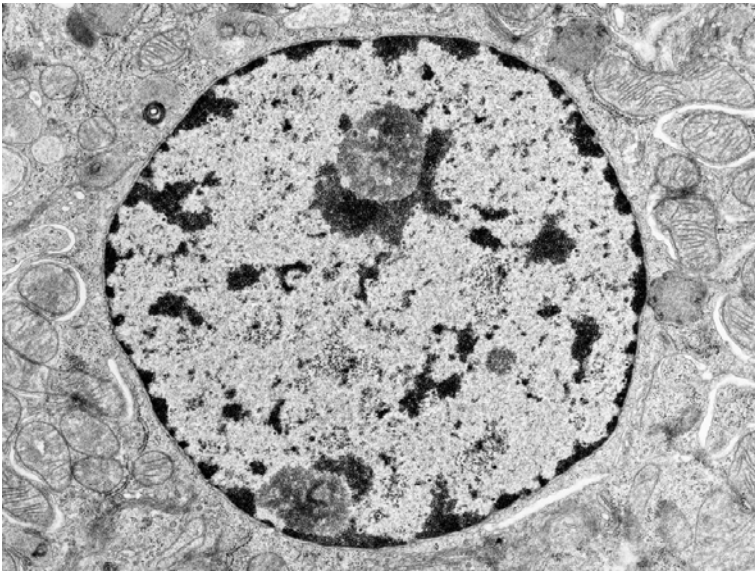
🚦 Cromatina in cellule a grado diverso di sintesi proteica



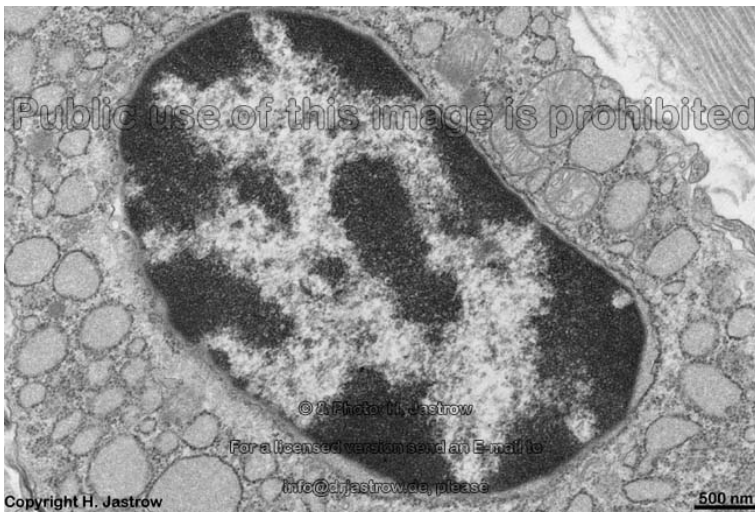
<http://cache1.asset-cache.net/gc/128553785-schematic-depiction-of-the-principal-gettyimages.jpg?v=1&c=IWSAsset&k=2&d=6Mvki1k4Xg4mRtHDYYQmHBo7NNtsMUCwgHhIS73xwuuYrYd6L9w8TwU6KA7K3AAX>



<http://www.histology.leeds.ac.uk/cell/assets/nucleus2.gif>

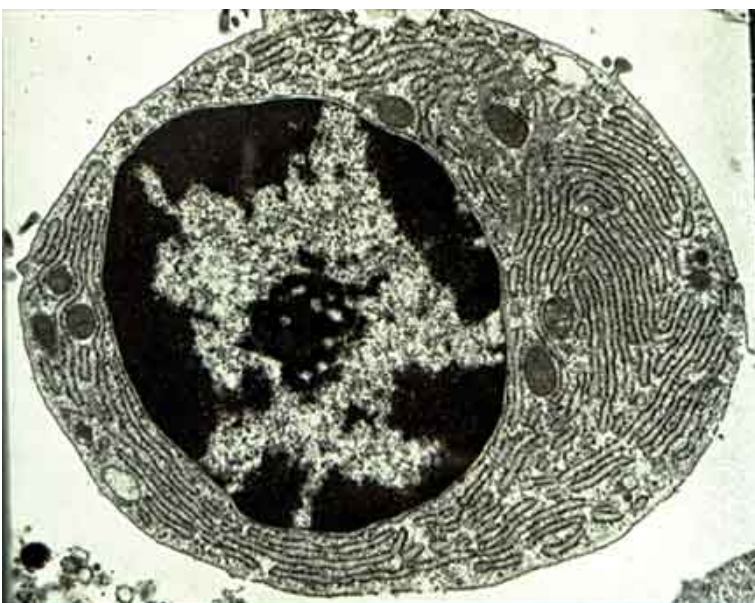


http://medcell.med.yale.edu/histology/cell_lab/images/euchromatin_and_heterochromatin.jpg



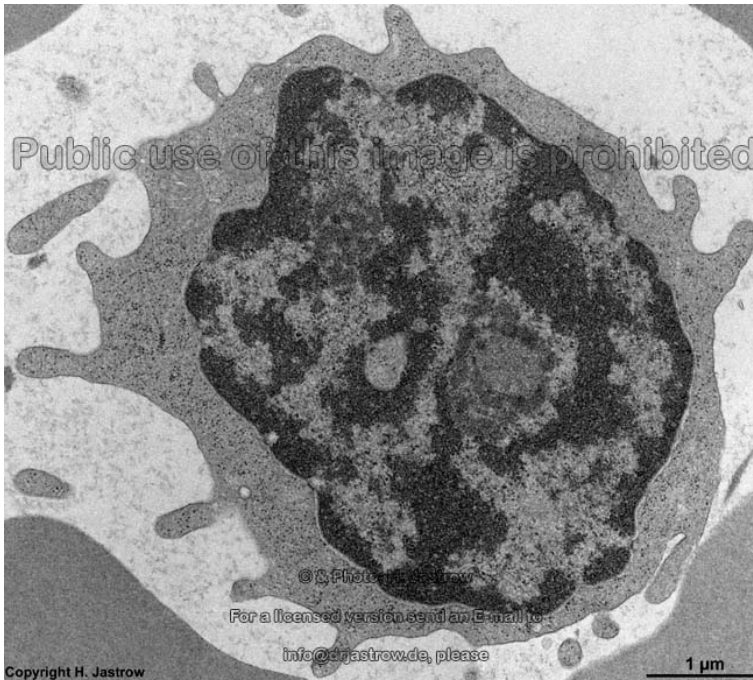
<http://www.uni-mainz.de/FB/Medizin/Anatomie/workshop/EM/eigeneEM/Colon/Col23Plz3.jpg>

Linfocito B attivato (plasma cellula) che produce grandi quantità della stessa proteina (anticorpo)

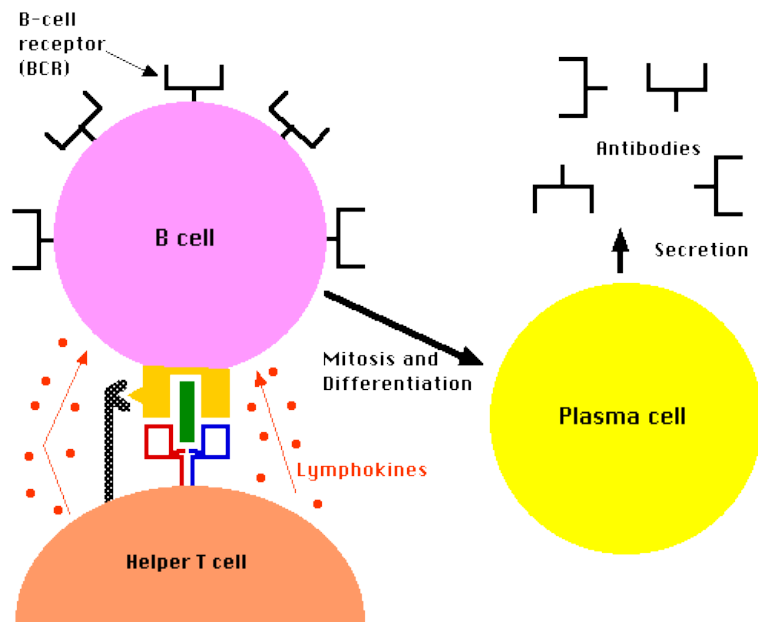


<https://theadventuresofbecky.files.wordpress.com/2010/03/plasma-cell-em.jpg>

Linfocita B non attivato:



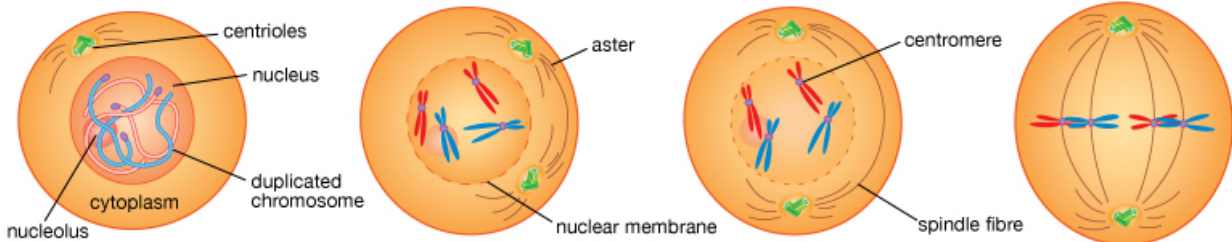
<https://www.uni-mainz.de/FB/Medizin/Anatomie/workshop/EM/eigeneEM/Blut/Ns60Lcok.jpg>



http://users.rcn.com/jkimball.ma.ultranet/BiologyPages/T/Th_Lymphokines.gif

Cellule in fasi diverse della mitosi

Mitosis, or somatic cell division

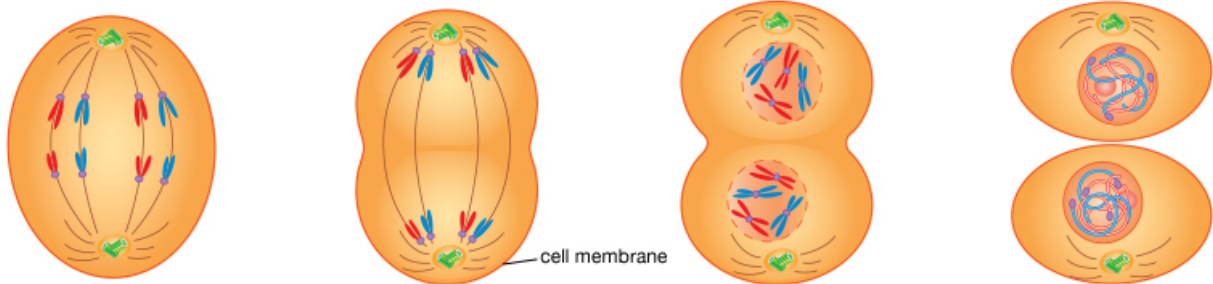


Prior to mitosis, each chromosome makes an exact duplicate of itself. The chromosomes then thicken and coil.

In early prophase, the centrioles, which have divided, form asters and move apart. The nuclear membrane begins to disintegrate.

In late prophase, the centrioles and asters are at opposite poles. The nucleolus and nuclear membrane have almost disappeared.

The doubled chromosomes—their centromeres attached to the spindle fibres—line up at mid-cell in the metaphase.



In early anaphase, the centromeres split. Half the chromosomes move to one pole, half to the other pole.

In late anaphase, the chromosomes have almost reached their respective poles. The cell membrane begins to pinch at the centre.

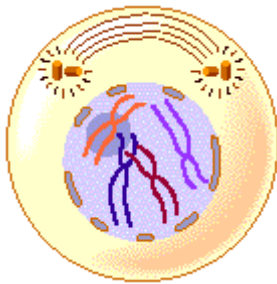
The cell membrane completes constriction in telophase. Nuclear membranes form around the separated chromosomes.

Mitosis completed, there are two cells with the same structures and number of chromosomes as the parent cell.

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<http://media-1.web.britannica.com/eb-media/87/78587-004-0E55D764.jpg>

PROFASE



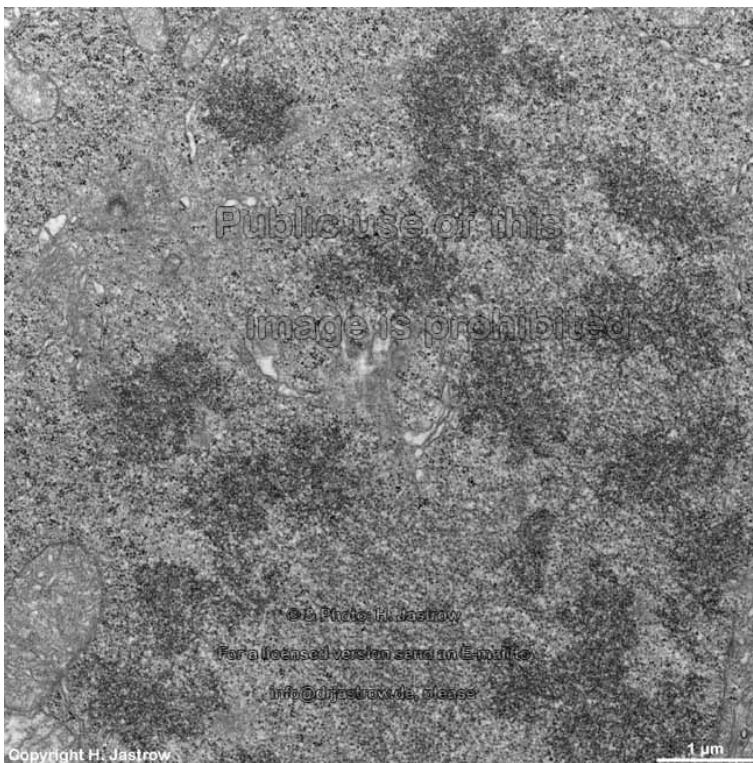
Prophase

The chromosomes appear condensed, and the nuclear envelope is not apparent.

http://www.phschool.com/science/biology_place/labbench/lab3/images/prophase.gif

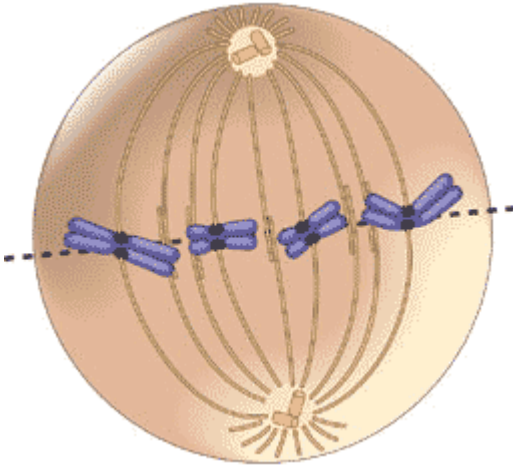


http://www.pathpedia.com/education/eatlas/histology/cells_and_epithelia/normal-mitosis-%5B2-ce13h-1%5D.jpeg?Width=600&Height=450&Format=4

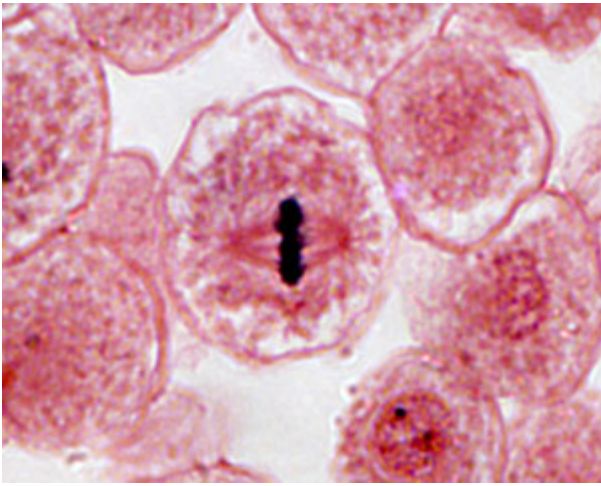


<https://www.uni-mainz.de/FB/Medizin/Anatomie/workshop/EM/eigeneEM/Tph/Tph160a.jpg>

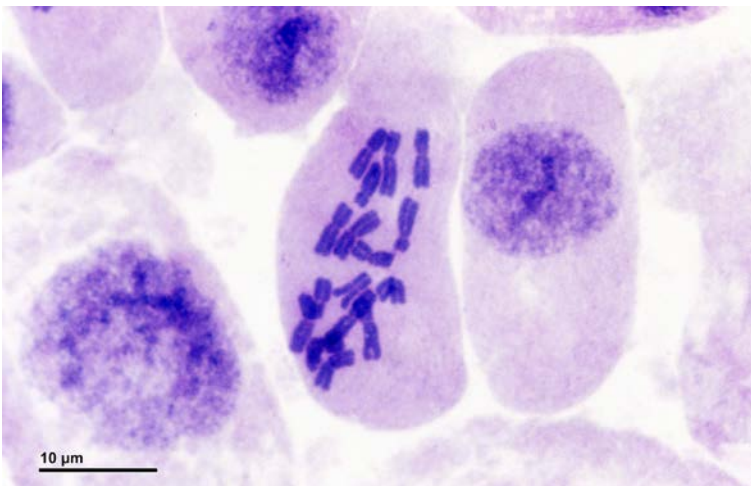
METAFASE [maggiore grado di compattazione della cromatina]



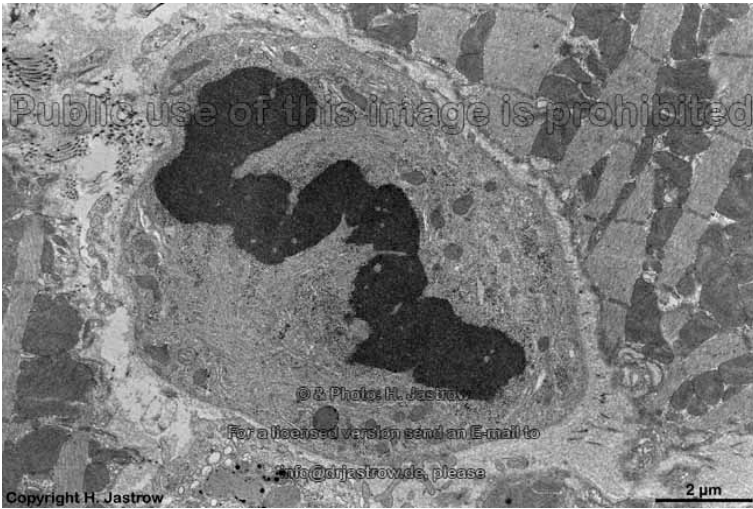
<http://www.quia.com/files/quia/users/lmcgee/mitosis/metaphase-diagram.gif>



http://faculty.baruch.cuny.edu/jwahlert/bio1003/images/mitosis/whitefish_metaphase.jpg

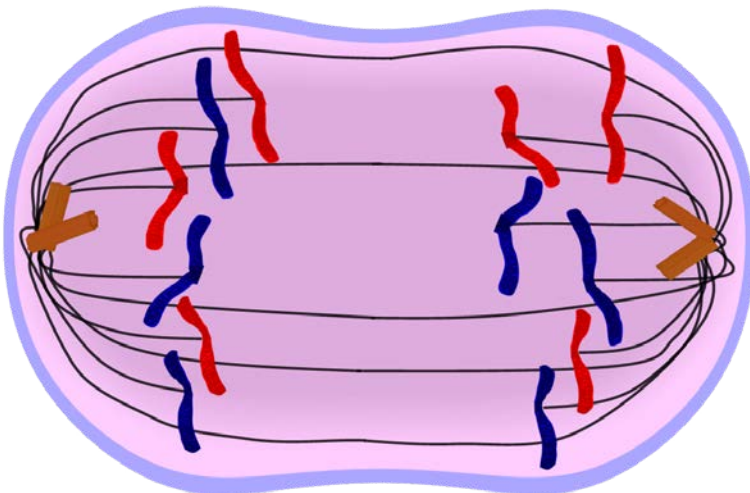


https://upload.wikimedia.org/wikipedia/commons/6/6c/Metaphase_%28261_21%29_Pressed%3B_meristem_of_root%3B_onion.jpg

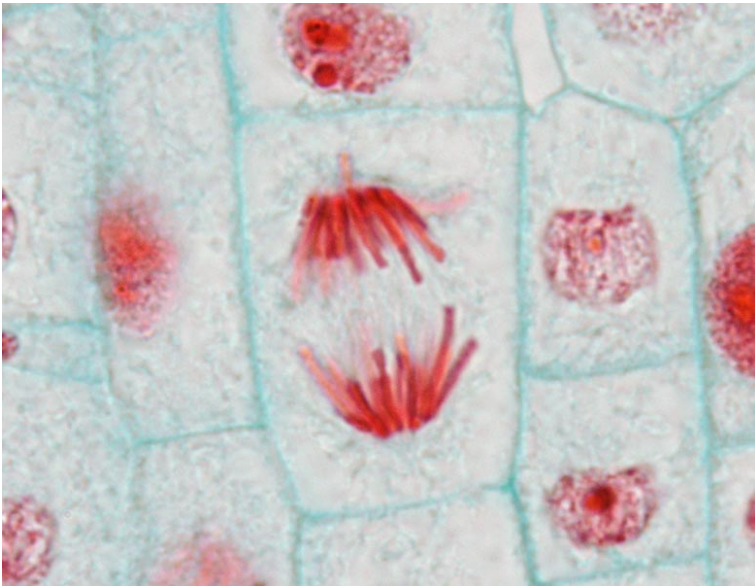


<https://www.uni-mainz.de/FB/Medizin/Anatomie/workshop/EM/eigeneEM/Herz/HMitose1.jpg>

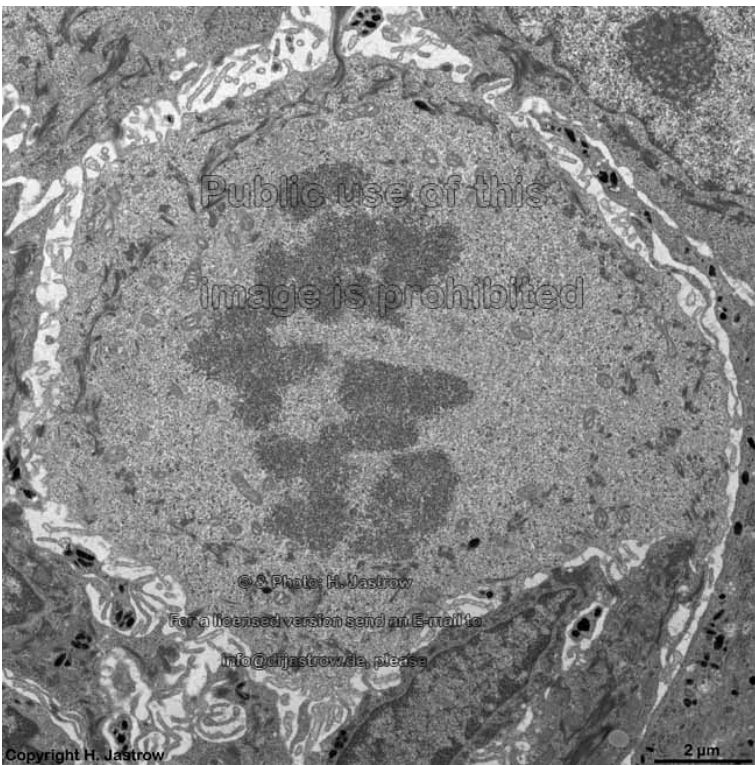
ANAFASE



<http://www.edupic.net/Images/Mitosis/anaphase.png>

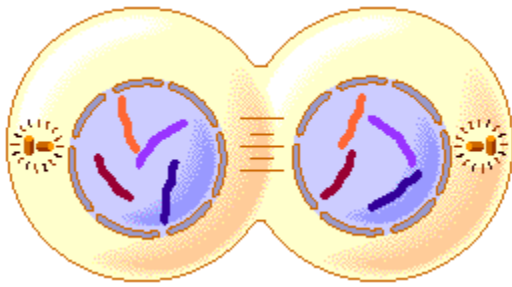


<http://botit.botany.wisc.edu/Resources/Botany/Mitosis/Allium/Anaphase.jpg>



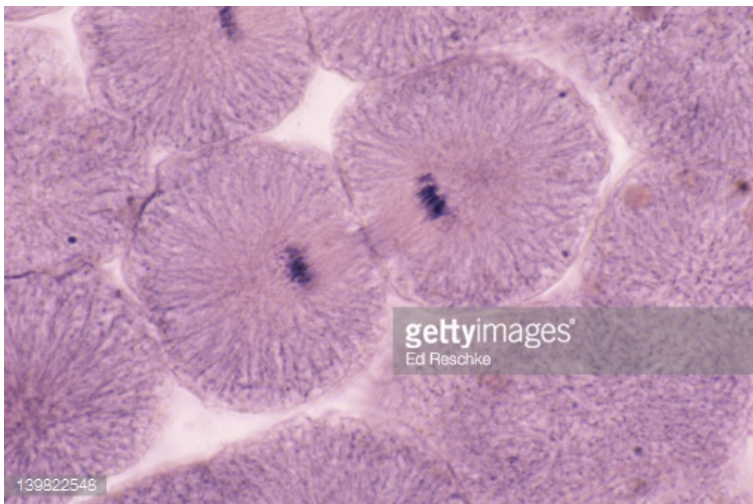
<https://www.uni-mainz.de/FB/Medizin/Anatomie/workshop/EM/eigeneEM/Haut/H347Mitose.jpg>

TELOFASE

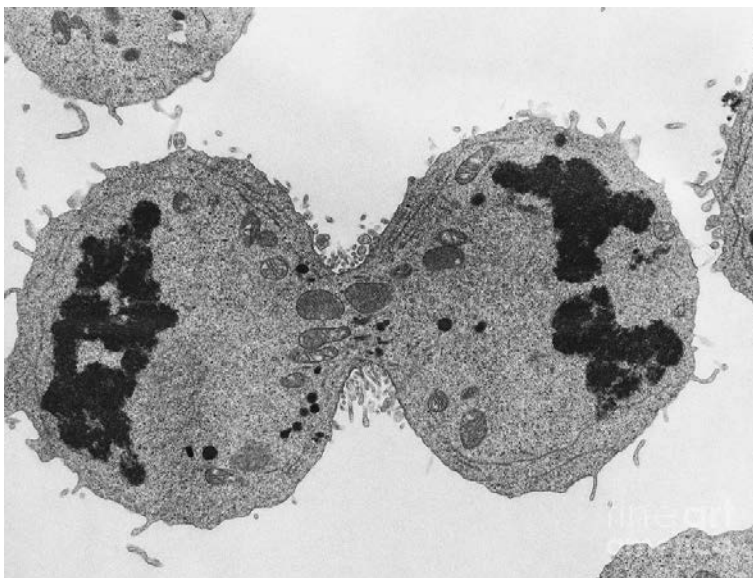


Telophase
The chromosomes are at the poles, and are becoming more diffuse. The nuclear envelope is reforming. The cytoplasm may be dividing.

http://www.phschool.com/science/biology_place/labbench/lab3/images/telophas.gif

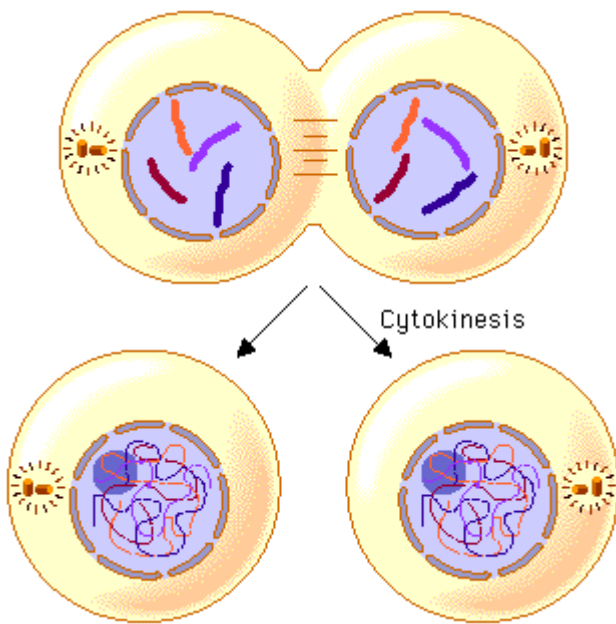


<http://cache3.asset-cache.net/gc/139822548-whitefish-mitosis-daughter-cells-following-gettyimages.jpg?v=1&c=IWSAsset&k=2&d=bTkK%2F1HV0XJY0sWMs1B4Kzg0AU6wWprv2DsvYhzhfQ6N2rNnK8HSHWAgANLYEs%2ByD>

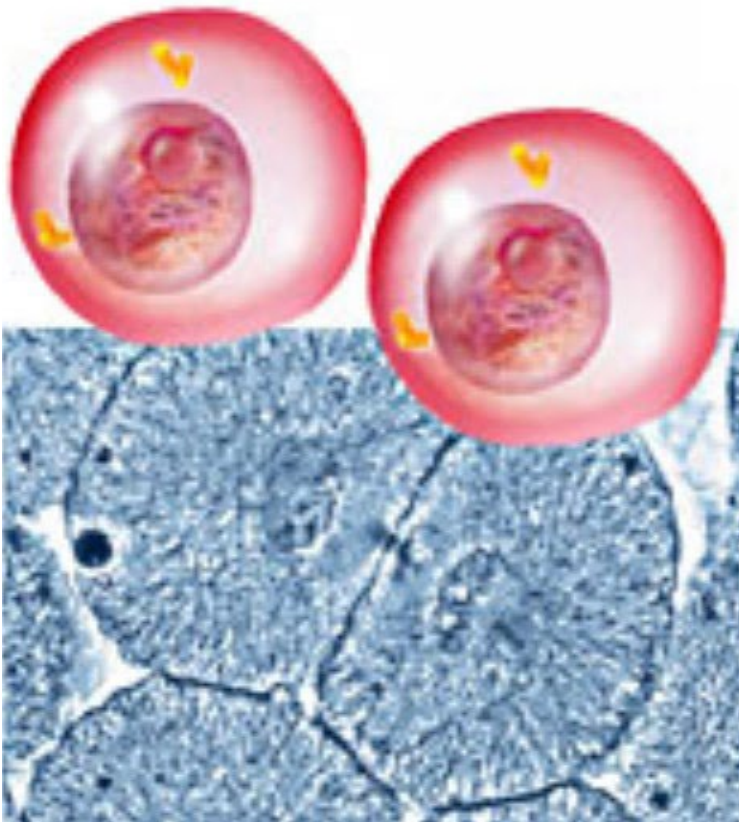


<http://images.fineartamerica.com/images-medium-large-5/mitosis-late-telophase-tem-david-m-phillips.jpg>

CYTOKINESIS

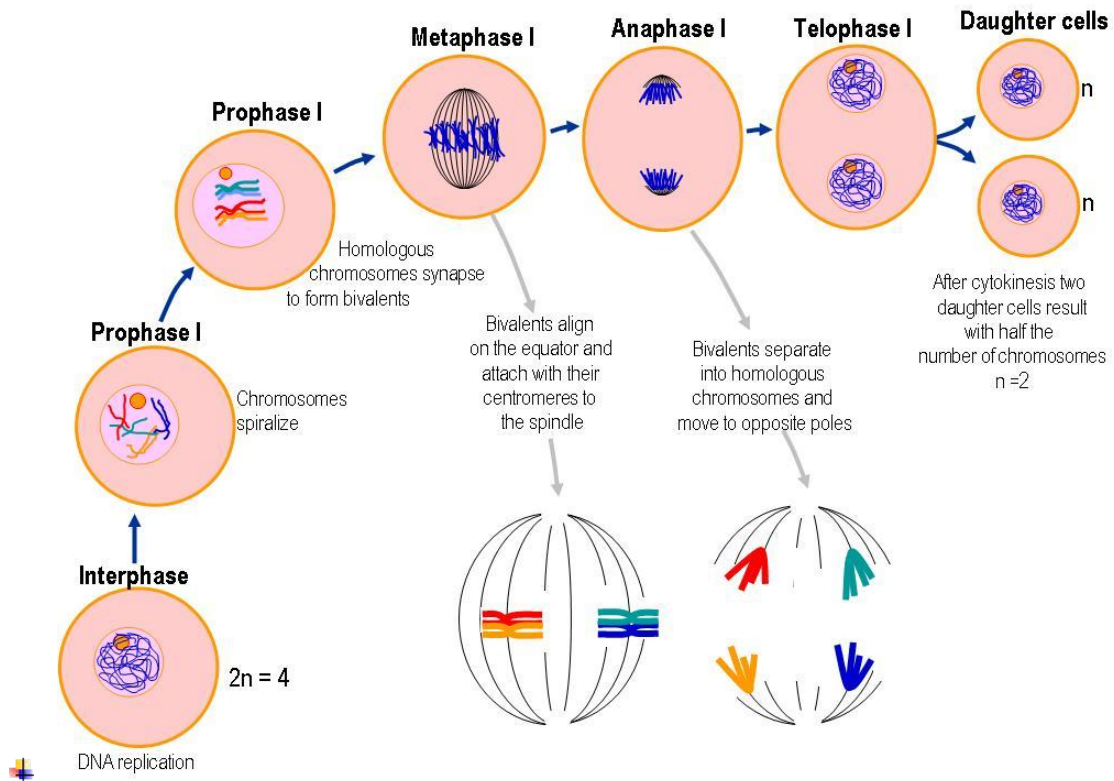


<http://image.tutorvista.com/content/feed/tvcs/cytokin.gif>



https://sites.google.com/site/mochebiologysite/_/rsrc/1363466632897/online-textbook/mitosis/CYTOKINESIS1.jpg

cellule in fasi diverse della meiosi i

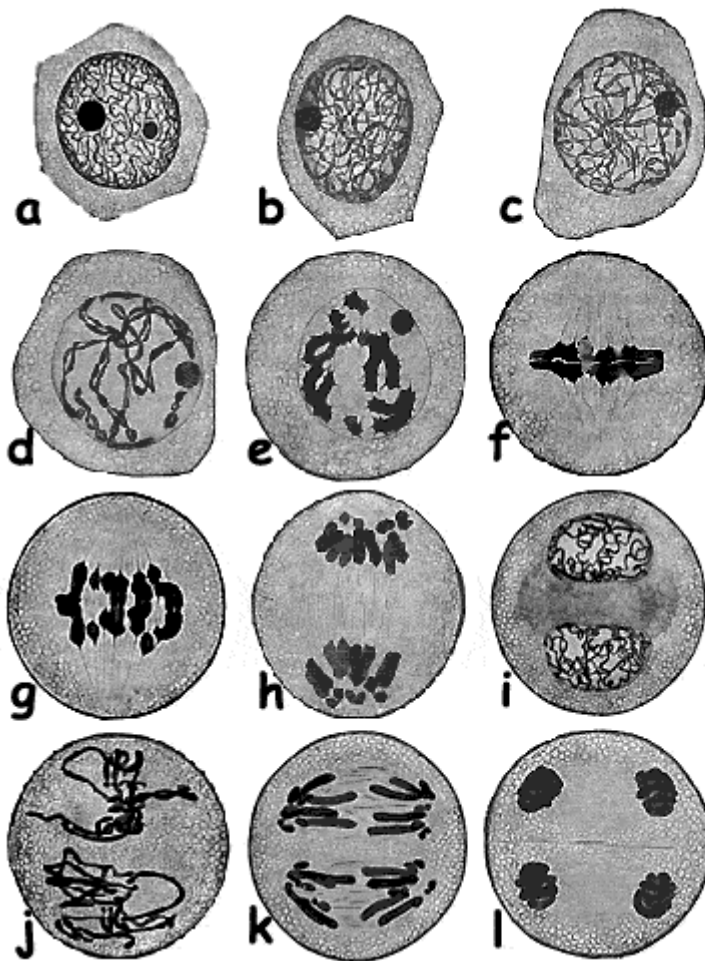


<http://geneticssuite.net/files/Meiosis%201.jpg>

MEIOSIS I

Prophase I	Metaphase I	Anaphase I	Telophase I
Homologous chromosomes further condense and pair. Crossing-over occurs. Spindle fibers form.	Microtubule spindle apparatus attaches to chromosomes. Homologous pairs align along spindle equator	Homologous pairs of chromosomes separate and move to opposite poles	One set of paired chromosomes arrives at each pole, and nuclear division begins.

https://online.science.psu.edu/biol011_sandbox_7239/node/7288



MEIOSIS I

Prophase I:

- a Leptotene
- b Zygotene
- c Pachytene
- d Diplotene
- e Diakinese
- f Metaphase I
- g Anaphase I
- h Telophase I

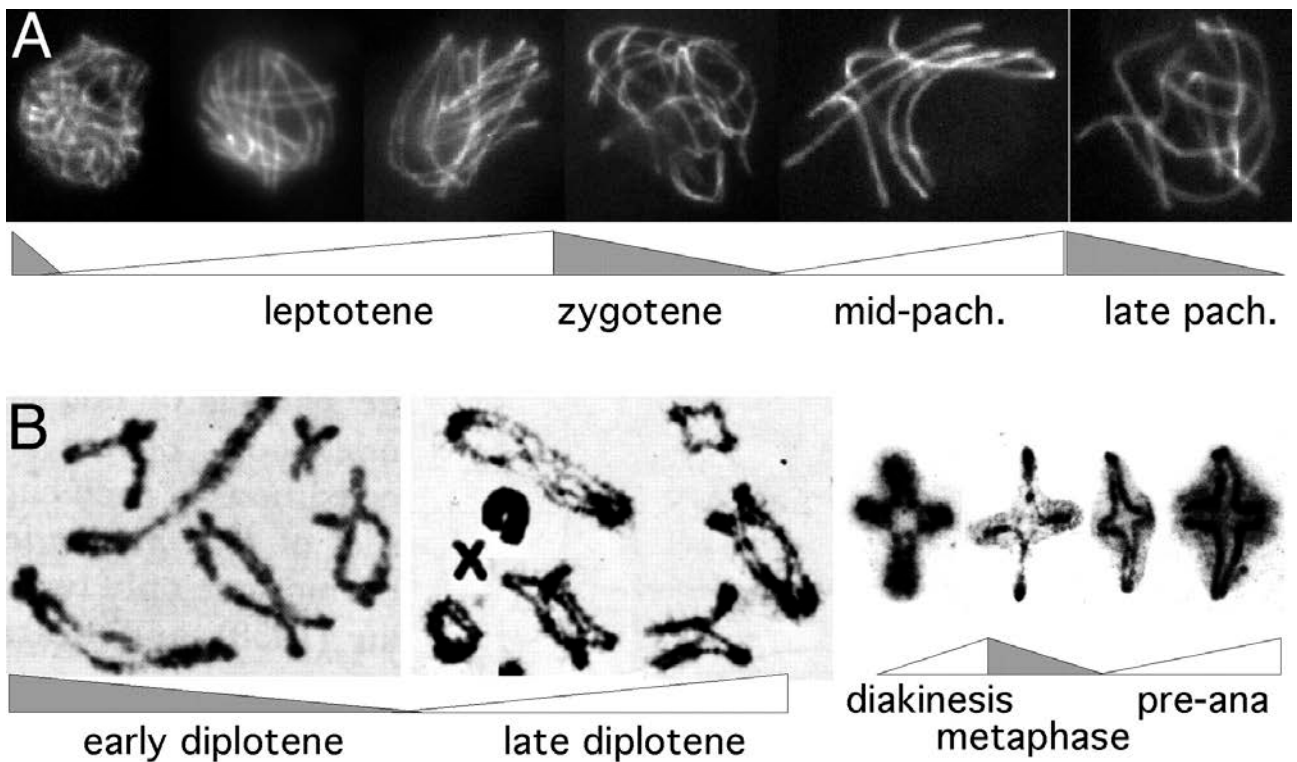
i INTERKINESIS

MEIOSIS II

- j Metaphase II
- k Anaphase II
- l Meiocytes (4)

Source: Schaffstein in Strasburg
www-vcbio.sci.kun.nl

<http://www.vcbio.science.ru.nl/images/cellcycle/maloemeiosis-zoom.gif>



leptotene

zygotene

mid-pach.

late pach.

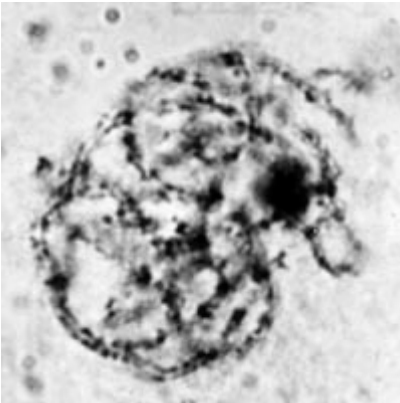
early diplotene

late diplotene

diakinesis
metaphase

pre-ana

<http://www.pnas.org/content/101/34/12592/F9.large.jpg>



Zigotene: <http://www.vcbio.science.ru.nl/images/cellcycle/meiosis-locusta-zygotene.jpg>



Pachitene: <http://www.vcbio.science.ru.nl/images/cellcycle/meiosis-locusta-pachytene.jpg>



Diacinesi: <http://www.vcbio.science.ru.nl/images/cellcycle/meiosis-locusta-diakinesis.jpg>