

Dysplasia

The cells that are part of the epithelium normally show regularity in shape, size and nucleus. In addition, they are regularly arranged in layers. When we talk about dysplasia, we mean that this **uniform appearance has been disturbed** by changes in the shape and size of cells, enlargement and hyperchromasia of the nucleus or irregularities in the arrangement of cells within the epithelium. Dysplasia is most commonly seen in hyperplastic **squamous epithelium**, which can be seen in epidermal actinic keratosis (caused by sunlight), and in areas of frequent **metaplasia** such as the bronchus and cervix. But it's not just a matter of squamous epithelium. Ulcerative colitis, a non-specific inflammation of the large intestine, is often accompanied by dysplastic changes in the cells of the mucosa.

Etiology

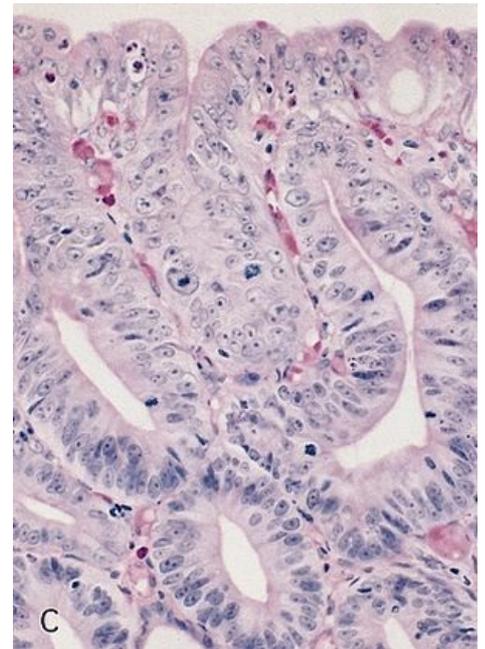
Like metaplasia, dysplasia is the result of persistent harmful influences and usually resolves when they stop, such as when smoking stops or when chronic inflammation of the cervix (cervicitis) is cured.

Microscopic image

Dysplasia shares many **common cytological features** with cancer, and the line between the two conditions can be very narrow. For example, differentiating severe dysplasia from early-stage cervical cancer is a common diagnostic problem for pathologists. Dysplasia is said to be a preneoplastic lesion in the sense that it is an inevitable stage in the development of cancer. **Severe dysplasia** is therefore considered an indication for the start **of preventive treatment**, removal of the offending agent or surgical removal of the affected tissue.

Dysplastic cells are less differentiated than hyperplastic or metaplastic cells and are more resistant to damage. Although it cannot grow independently, its replication is not as well regulated as that of hyperplastic and metaplastic cells. In the interests of its own survival, the dysplastic cell has found a way to cope with a potentially dangerous environment. This adaptation of the cell can also be considered **advantageous**. It not only increases the chance of survival of the given cell, but also protects the integrity of the tissue. For example, holes do not form in the bronchi because the epithelial cells have been destroyed by cigarette smoke.

Unfortunately, this system is not so well balanced that the adaptation stops during dysplasia and the cell can transform into **a tumor cell**.



Dysplasia of the esophageal mucosa

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Source

- RUBIN, Edited by Emanuel – KARETNIKOV, John L. Farber; with 40 contributors; illustrations by Dimitri. *Pathologists*. 2.. edition. Philadelphia : Lippincott, 1988. ISBN 0397506988.