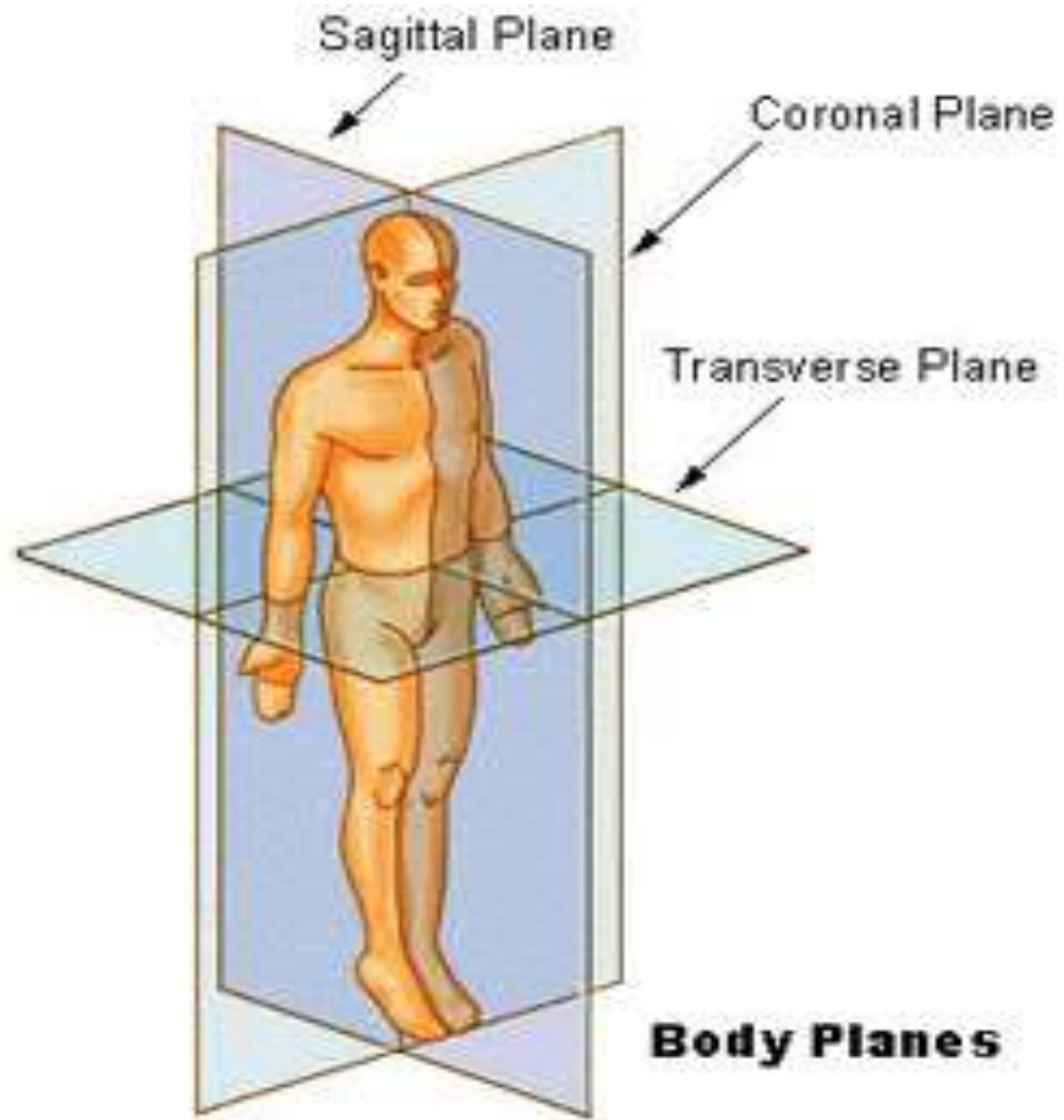


Planes of the Body

- **Coronal Plane (Frontal Plane)** - A vertical plane running from side to side; divides the body or any of its parts into anterior and posterior portions.
- **Sagittal Plane (Lateral Plane)** - A vertical plane running from front to back; divides the body or any of its parts into right and left sides.
- **Axial Plane (Transverse Plane)** - A **horizontal** plane; divides the body or any of its parts into upper and lower parts.
- **Median plane** - Sagittal plane through the midline of the body; divides the body or any of its parts into right and left halves.

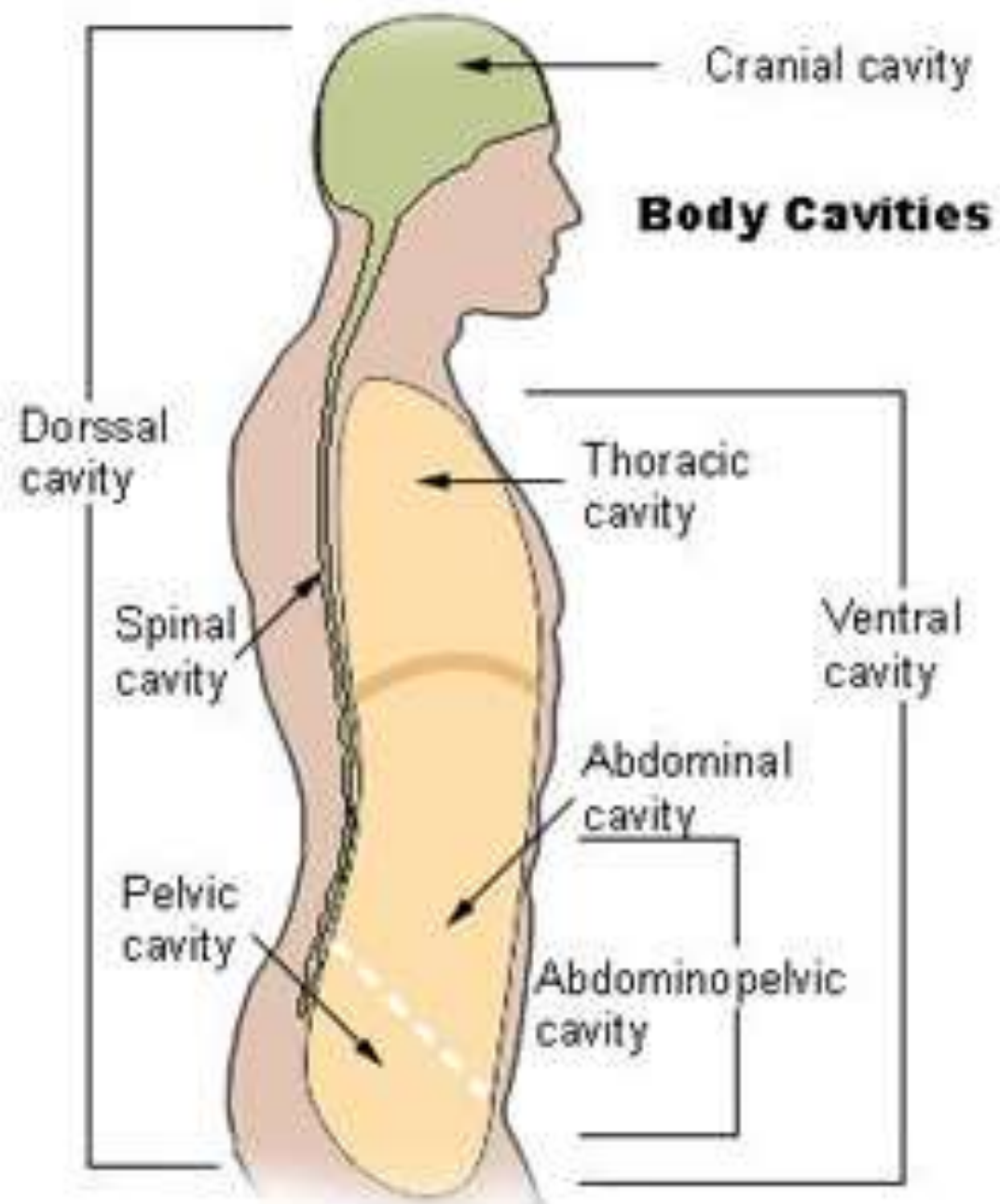


Directional Terms

- Directional terms describe the positions of structures relative to other structures or locations in the body.
- **Superior** or **cranial** - toward the **head** end of the body; upper (example, the hand is part of the superior **extremity**).
- **Inferior** or **caudal** - away from the head; lower (example, the **foot** is part of the inferior extremity).
- **Anterior** or **ventral** - front (example, the kneecap is located on the anterior side of the leg).
- **Posterior** or **dorsal** - back (example, the shoulder blades are located on the posterior side of the body).
- **Medial** - toward the midline of the body (example, the middle toe is located at the medial side of the foot).
- **Lateral** - away from the midline of the body (example, the little toe is located at the lateral side of the foot).
- **Proximal** - toward or nearest the trunk or the point of **origin** of a part (example, the proximal end of the **femur** joins with the pelvic **bone**).
- **Distal** - away from or farthest from the trunk or the point or origin of a part (example, the hand is located at the distal end of the forearm).

Body Cavities

- The cavities, or spaces, of the body contain the [internal](#) organs, or [viscera](#). The two main cavities are called the ventral and dorsal cavities. The ventral is the larger [cavity](#) and is subdivided into two parts (thoracic and abdominopelvic cavities) by the diaphragm, a dome-shaped [respiratory muscle](#).
- [Thoracic cavity](#)
 - The upper ventral, thoracic, or chest cavity contains the [heart](#), lungs, [trachea](#), [esophagus](#), large [blood](#) vessels, and nerves. The [thoracic cavity](#) is bound laterally by the ribs (covered by costal [pleura](#)) and the diaphragm caudally (covered by diaphragmatic pleura).
- [Abdominal and pelvic cavity](#)
 - The lower part of the ventral (abdominopelvic) cavity can be further divided into two portions: [abdominal](#) portion and pelvic portion. The [abdominal cavity](#) contains most of the [gastrointestinal tract](#) as well as the kidneys and adrenal glands. The abdominal cavity is bound cranially by the diaphragm, laterally by the body wall, and caudally by the pelvic cavity. The pelvic cavity contains most of the urogenital [system](#) as well as the [rectum](#). The pelvic cavity is bounded cranially by the abdominal cavity, dorsally by the [sacrum](#), and laterally by the [pelvis](#).
- [Dorsal cavity](#)
 - The smaller of the two main cavities is called the [dorsal cavity](#). As its name implies, it contains organs lying more posterior in the body. The dorsal cavity, again, can be divided into two portions. The upper portion, or the [cranial cavity](#), houses the [brain](#), and the lower portion, or vertebral [canal](#) houses the [spinal cord](#).



What is cytology and some terms related to it

- Cytology is also known as cell biology. It is the study of cell. It is important for the researchers or biologists in generating vaccines, medicines etc. This article deals with the importance of cytology, what is cytology and various terms related to it.
- **Cytology:** The study of individual cells with the microscope.

Cytology is derived from Greek word kytos means 'hollow vessel' or 'container'. The prefix cyto means 'cell' and suffix ology means 'study of'. Therefore we can say that cytology is the study of cell. It is that branch of science which deals with the structural and functional organization of cell. It is also known as cell biology. This article deals with the cytology, its importance and some terms related to it.

As we know that **cells are the structural and functional unit of life**. To study the structure of cell, their functions, composition and the interaction of cells with other cells and larger environment in which they exist is known as cytology. It involves looking at the individual cells for abnormal changes of both the nucleus and also the cytoplasm or body of the cell. Nucleus contains genetic material that controls the cell and its behavior, also determines what type of a cell it will become. The changes that took place in the nucleus whether changing in size, shape or appearance will be assessed by a trained cytologist only, which helps in diagnosing cancer and pre-cancer. It is also used to diagnose many non-cancerous medical conditions like infections, systemic diseases.

There are two main branches of cytology first involved in non-cancerous and second in cancerous like cervical cancer.

Karyokinesis: Division of nucleus during cell division.

2. **Cytokinesis:** Division of cytoplasm.

3. **Diploid:** Two complete set of chromosome is known as diploid which is found in somatic cell.

4. **Haploid:** Single set of chromosome in cell is called haploid which is found in gametes.

Crossing over: Exchange of genetic material between two non sister chromatids takes place during meiosis cell division.

6. **Homologous chromosome:** A pair of chromosome having same size and shape bearing corresponding gene.

7. **Phenotype:** The character of organism which can be seen directly.

8. **Genotype:** Genetic constitution of organism.

9. **Tonoplast:** The membrane surrounding the vacuole.

10. **Unit membrane:** The basic trilaminar structure of cell membrane.

From this article we come to know what is cytology or cell biology, why it is important and what are the various terms related to it.

Histology: A branch of anatomy that deals with the minute structure of animal and plant tissues as discernible with the microscope

Anatomic Pathology: General term for the area of pathology that deals with the gross and microscopic analysis of organs, tissues, and cells, which includes surgical pathology, cytopathology, and autopsy.

Autopsy: Postmortem evaluation of a body to determine the cause and manner of death.

Biopsy: Removal of cells or tissues from the body for pathological examination.

Blocks: Hardened tissues encased in wax blocks that are cut to produce glass microscopic slides.

Core Biopsy: A biopsy in which a cylindrical sample of tissue is obtained (as from a kidney or breast) by a hollow needle.

Excision: Surgical removal of tissue.

H&E: An abbreviation for hematoxylin and eosin stains, common biological dyes that give tissue elements distinct colors. These are most often pink, blue, red, and purple.

Microscopic: Visible only with a microscope and not with the naked eye.

Pap Smear: A screening test procedure in which cells from a woman's cervix (uterus) are examined microscopically for abnormalities.

Specimen: A small part of the human body—either tissue or liquid—that serves as a sample for pathologic evaluation.

Slides: A general term for thin sheets of glass on which tissue specimens are placed for microscopic analysis.