

# Oncology

# Oncology

## Overview

Often compared with a crab hanging onto a rock by the beach, cancer has been one of the greatest ailments faced by humanity and an engaging subject of study. For the past 150 years, ever since Virchow hypothesized the cellular origin of cancer, research has been ongoing with the ultimate goal of discovering a definitive treatment. As a result, the field of oncology developed, which can be defined as the branch of medicine dedicated to the study, classification, diagnosis, and management of cancer. The subfields of oncology include medical, surgical, radiological, and clinical oncology.

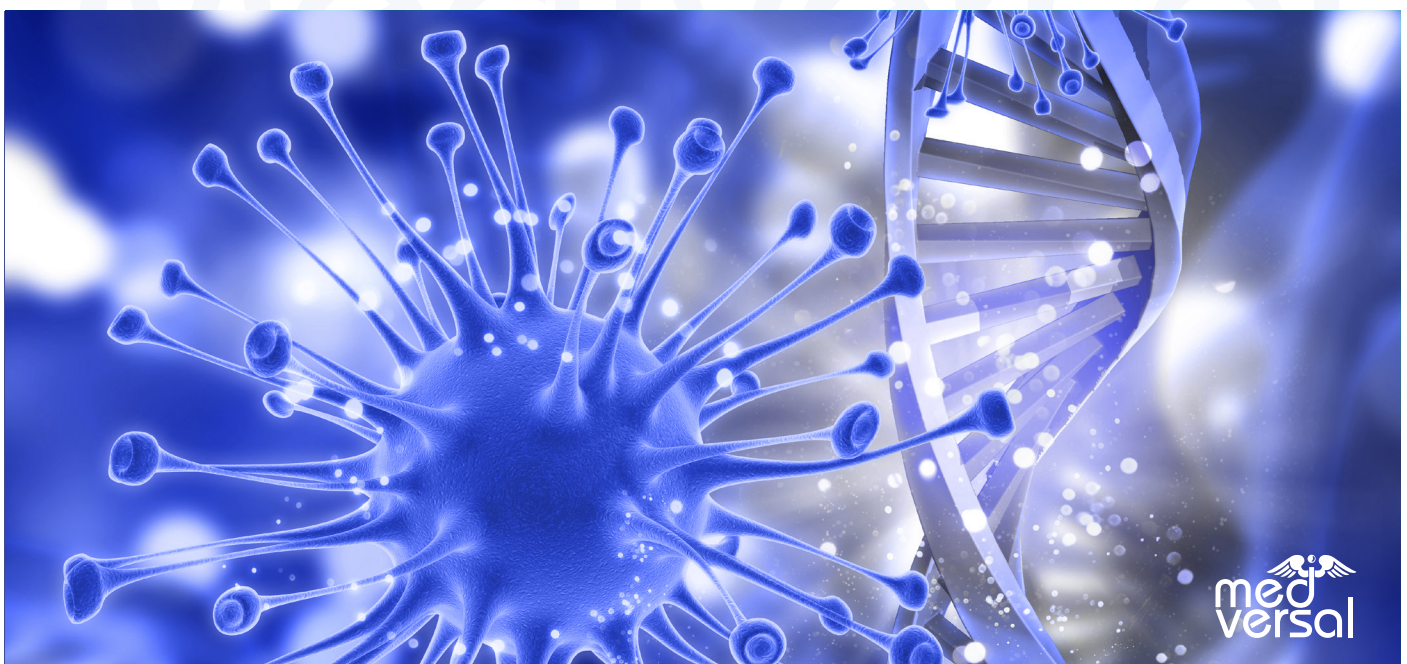
In this course, the student will be introduced to the basic concepts of the pathophysiology of carcinogenesis and neoplasia in every organ system. For optimal comprehension, the student should have a basic understanding of cell and molecular biology, especially DNA replication and the cell cycle.

With the steadily increasing incidence of noncommunicable diseases, oncological conditions and emergencies are becoming more prevalent. A competent physician should be aware of the most common oncological conditions in their area of work and know the clinical presentation of each condition. Additionally, knowledge of the available oncological services and remission pathways is important to ensure that adequate care is delivered by the oncological team.

As the field of medicine continues to acquire a more molecular focus and as antineoplastic interventions improve, a thorough understanding of the basic principles of oncology will serve as a primer to understand the many advancements in this field made in the near future.

## Topics

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# Principles of Neoplasia & Carcinogenesis

- Neoplasia, Dysplasia, Tumor and Cancer: Differentiating Definitions– Neoplasia
- Types of Tumors: Tissue, Benign and Malignant – Neoplasia
- Benign Neoplasm and Teratoma – Neoplasia
- Malignant Neoplasms – Neoplasia
- Bronchogenic Carcinoma, Osteogenic Sarcoma & Grading– Neoplasia
- Diagnosis of Cancer – Neoplasia
- Malignant Neoplasm: Invasion and Metastasis – Neoplasia
- Metastasis and Bone Metastasis – Neoplasia
- Epidemiology of Cancer – Neoplasia
- Introduction to Carcinogenesis – Carcinogenesis
- Carcinogenic Chemicals – Carcinogenesis
- Ultraviolet Radiation: Excision Repair & Carcinogen – Carcinogenesis
- Ionizing Radiation – Carcinogenesis
- DNA Virus – Carcinogenesis
- DNA Repair Defects & Neoplastic Molecular Markers – Carcinogenesis
- Four Classes of Normal Regulatory Genes & Signal Transduction – Carcinogenesis
- Proto-Oncogenes & Mechanisms of Oncogene Activation – Carcinogenesis
- Oncogenes – Carcinogenesis
- Cell Cycle: Cyclin D – Carcinogenesis
- RAS Protein & Signal Transduction – Carcinogenesis
- Tumor Suppressor Genes: Definition and Inactivation – Carcinogenesis
- Paraneoplastic Syndromes – Carcinogenesis
- Retinoblastoma – Carcinogenesis



- Tumor Suppressor Genes: VHL, WT, NF, BRCA, DCC – Carcinogenesis
- Regulation of Apoptosis and Clonality– Carcinogenesis
- Tumor Progression: Adenoma Carcinoma Sequence – Carcinogenesis
- Paraneoplastic Endocrinopathies – Carcinogenesis

## Lymphadenopathy – White Blood Cell Pathology (WBC)

- Lymphadenopathy: Introduction – White Blood Cell Pathology
- Lymphadenopathy: Lymphoid Neoplasms – White Blood Cell Pathology
- Lymphadenopathy: Non-Hodgkin Lymphoma (NHL) – White Blood Cell Pathology
- Lymphadenopathy: Follicular Lymphoma and Lymphoid Hyperplasia – White Blood Cell Pathology
- Lymphadenopathy: Diffuse Large B-Cell Lymphoma – White Blood Cell Pathology
- Lymphadenopathy: Burkitt Lymphoma – White Blood Cell Pathology
- Lymphadenopathy: Hodgkin Lymphoma (Hodgkin's Disease) – White Blood Cell Pathology
- Lymphadenopathy: Reed-Sternberg Cells – White Blood Cell Pathology
- Lymphadenopathy: Plasma Cell Neoplasms – White Blood Cell Pathology
- Lymphadenopathy: Multiple Myeloma (Introduction)
- Lymphadenopathy: Serum Protein Electrophoresis – White Blood Cell Pathology
- Lymphadenopathy: Signs and Symptoms of Multiple Myeloma – White Blood Cell Pathology
- Lymphadenopathy: Plasmacytoma, MGUS and Lymphoplasmacytic Lymphoma – White Blood Cell Pathology
- Lymphadenopathy: Splenomegaly – White Blood Cell Pathology

- Lymphadenopathy: Thymus Disorders – White Blood Cell Pathology
- Lymphadenopathy: Thymoma – White Blood Cell Pathology

## Leukemia – White Blood Cell Pathology (WBC)

- Leukemia: Acute Leukemia – White Blood Cell Pathology
- Leukemia: Hematopoiesis – White Blood Cell Pathology
- Leukemia: Acute Myeloid Leukemia (AML) – White Blood Cell Pathology
- Leukemia: Acute Lymphocytic Leukemia (ALL) – White Blood Cell Pathology
- Leukemia: Chronic Myelogenous Leukemia (CML) – White Blood Cell Pathology
- Leukemia: Chronic Lymphoid Leukemia (CLL) – White Blood Cell Pathology
- Leukemia: Polycythemia – White Blood Cell Pathology
- Leukemia: Types of Leukemia incl. Hairy Cell Leukemia (HCL) & Adult T-Cell Leukemia/Lymphoma (ATLL) – White Blood Cell Pathology
- Cancer Drugs & Chemotherapeutic Agents: MTX, 5-FU, 6-MP, 6TG & Ara-C – White Blood Cell Pathology
- Cancer Drugs & Chemotherapeutic Agents: Dactinomycin, Doxorubicin, Bleomycin etc. – White Blood Cell Pathology

## Lung Cancer

- Lung Cancer: Definition
- Small Lung Cancer
- Adenocarcinoma
- Squamous Cell Carcinoma
- Large Cell Carcinoma

- Bronchial Carcinoid
- Mesothelioma
- Lung Nodules and Cancer

## Neoplasms of the Endocrine System

- Goiter and Thyroid Nodules
- Thyroid Adenomas and Thyroid Carcinomas
- Types of Thyroid Carcinoma
- Pheochromocytoma – Adrenal Medulla
- Hereditary Disorders: Von-Hippel-Lindau Syndrome, Sturge-Weber-Syndrome, Neuroblastoma, MEN2A & MEN2B – Adrenal Medulla
- Multiple Endocrine Neoplasia Type 1 (MEN1) – Enteroendocrine Tumors
- Gastrinoma – Enteroendocrine Tumors
- Glucagonoma (Alpha Cell Tumor) – Enteroendocrine Tumors
- VIPoma – Enteroendocrine Tumors

## Neoplasms of the Reproductive System

- Vulvar Intraepithelial Neoplasia & Extramammary Paget's Disease
- Vaginal Cancer
- Endometrial Polyp
- Leiomyoma vs. Leiomyosarcoma
- Endometrial Hyperplasia
- Endometrial Adenocarcinoma
- Tumors and Cysts in the Fallopian Tube
- Benign Cysts

- Ovarian Tumors
- Types of Ovarian Tumors: Epithelial Tumors
- Types of Ovarian Tumors: Endometrioid Tumors
- Types of Ovarian Tumors: Germ Cell Tumors
- Types of Ovarian Tumors: Mature Teratoma
- Yolk Sac Tumor (Endodermal Sinus Tumor)
- Types of Ovarian Tumors: Choriocarcinoma
- Types of Ovarian Tumors: Sex Cord-Stromal Tumors & Granulosa-Theca Tumor
- Types of Ovarian Tumors: Metastatic Ovarian Tumors
- Breast Cancer: Mammographic Signs
- Intraductal Papilloma
- Morphology of Breast Carcinoma
- Types of Non-Invasive Breast Cancer
- Clinical Anatomy of Breast Cancer
- Types of Invasive Breast Cancer
- Breast Cancer: Epidemiology & Risk Factors
- Breast Cancer Classification
- Testicular Cancer
- Types of Germ Cell Tumors (GCT)
- Types of Non Germ Cell Tumors

## Neoplasms of the Gastrointestinal System

- Esophageal Cancer
- Stomach Cancer
- Gastric Lymphoma
- Gastric Polyps
- Carcinoid Syndrome



- Colon Cancer: Diagnosis and Management
- Colon Cancer: Risk Factors, Diagnosis & Treatment
- Colon Polyps
- Familial Adenomatous Polyposis, Gardner's Syndrome and Turcot Syndrome
- Peutz-Jeghers Syndrome, Juvenile Polyposis and HNPCC
- Types of Hepatobiliary Tumors
- Malignant Liver Tumors
- Benign Liver Tumors
- Pancreatic Pseudocyst
- Pancreatic Cancer
- Choledochal Cysts
- Cholangiocarcinoma

## Tumors of the CNS

- Tumors of the CNS: Introduction
- Neuroepithelial Tumors: Astrocytoma
- Neuroepithelial Tumors
- Neuroepithelial Tumors: Oligodendroglioma
- Neuroepithelial Tumors: Medulloblastoma
- Meningeal Tumors: Meningioma
- Other Primary CNS Tumors

## Neoplastic Skin Diseases

- Dermatofibroma (Benign Fibrous Histiocytoma)
- Seborrheic Keratosis (Seborrheic Eczema) and Actinic Keratosis (Solar Keratosis)
- Basal Cell Carcinoma (BCC, Basal Cell Cancer)
- Squamous Cell Carcinoma (SCC, Squamous Cell Cancer)

- Actinic Cheilitis
- Mycosis Fungoides
- Benign Nevus and Dysplastic Nevus
- Malignant Melanoma

## Pediatrics Oncology

- Leukemia in Children
- Leukemia in Children: General Symptoms
- Lymphoma in Children
- Central Nervous System Tumors in Children
- 3 Major Types of CNS Tumors: Medulloblastoma & Primitive Neuroectodermal Tumor (PNET), Ependymoma and Glioma
- Neuroblastoma in Children
- Wilms Tumor
- Retinoblastoma in Children

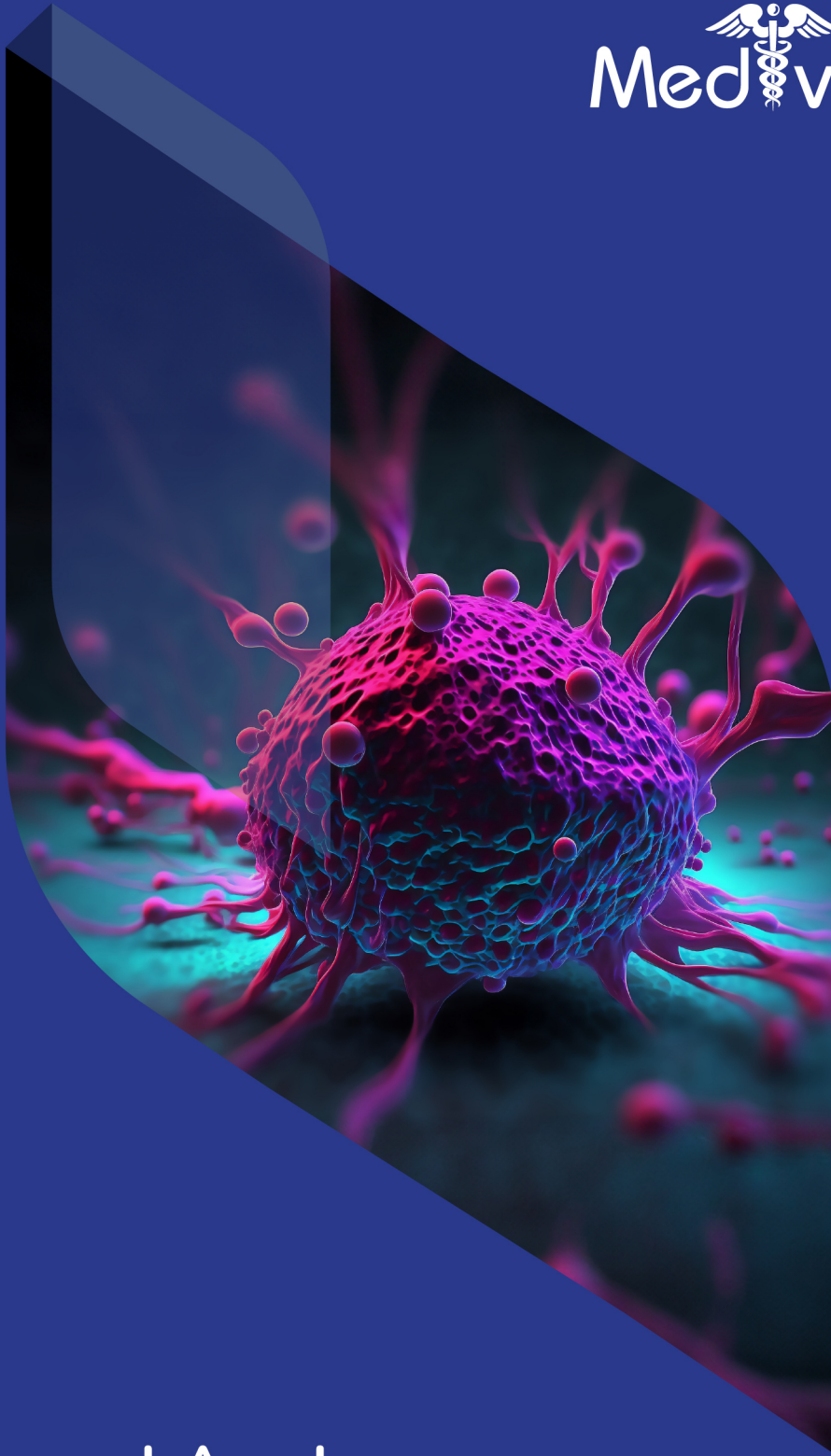
## Hematology and Oncology — Pathology

- Introduction to Red Blood Cell Disorders
- Microcytic Anemia – Red Blood Cell Pathology (RBC)
- Macrocytic Anemia – Red Blood Cell Pathology (RBC)
- Normocytic Anemia – Red Blood Cell Pathology (RBC)
- Hemolytic Anemia – Red Blood Cell Pathology (RBC)
- Lymphadenopathy – White Blood Cell Pathology (WBC)
- Quantitative White Blood Cell Disorders – White Blood Cell Pathology (WBC)
- Leukemia – White Blood Cell Pathology (WBC)
- Complete Blood Count (CBC) (Nursing)
- Cancer – Med-Surg Nursing

# Why Mediversal?

	Mediversal	Competitor
CPD hours/ Credit	✔ 110 hours/Credit	⚠ 3—50 hours/Credit
NMC Guideline	✔ Advantages in accordance with provision 1.4.2 of NMC regulations	⚠ Not all. (Very few)
Renowned International faculties	✔ Yes	⚠ Only for few subjects
Faculty to learner ratio	✔ 1:10	✔ 1:50 or 1:75
Case based learning	✔ Yes	✘ No
AI supported learning	✔ Yes	✘ No
Live Interaction Sessions	✔ Yes	✘ No
Clinical Attachments	✔ Yes (Case to Case basis)	✔ Yes
Associated with Hospitals for Clinical Training	✔ Yes	✔ Yes
Books	✔ Yes (Printable Pdf copy)	✘ No
Complementary e-Learning Module & Certification	✔ Yes	✘ No
Learner Support	✔ Yes	✘ No
Community of Doctors for peer support (Mediversal Alumni only)	✔ Yes	✘ No
Alumni Support	✔ Yes	⚠ Only a few
e-Certification	✔ Yes	✔ Yes
Physical Certification	✔ Yes	⚠ Only a few
Lifetime certificate validity	✔ Yes	✔ Yes
Digital Marketing and Business Support for your hospital/clinic	✔ Yes	✘ No
Admission process	✔ Smooth, Transparent & all details provided	⚠ Spamming through multiple channels.
Data and privacy protection	✔ Yes	✘ No
CME access	✔ Yes (Lifetime)	✘ No
Medico Legal Session	✔ Yes (Free. By renowned high court advocates)	✘ No
National Level Felicitation Award (for Mediversal Alumni)	✔ Yes	✘ No

**Mediversal**



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