

Diagnostic Programs

Yale Pathology Labs are part of the Department of Pathology at the Yale School of Medicine. At Yale Pathology Labs, science and medicine converge as the latest research is transferred directly to the patient. We offer state-of-the-art diagnostic services in Cytopathology, Surgical Pathology, and Autopsy, supported by a variety of specialty laboratories: Cytoprep, Electron Microscopy, Histology, Immunohistochemistry, and Molecular Diagnostics.

Led by anatomical pathologists specialized in **Cytopathology** as well as surgical pathology, our team of certified cytotechnologists analyze over 100,000 specimens a year and conduct a wide array of tests, including the following: early detection of cervical cancer, squamous cell carcinoma, endometrial adenocarcinoma, ovarian adenocarcinoma, HPV testing, bronchial lavages (pneumocystis carinii, aspergillus), fine needle aspirations (lung, liver, thyroid, pancreas), body fluid cytology (pleural, peritoneal, pericardial), mesothelioma, metastatic adenocarcinoma, and circulating tumor cells.

Our board-certified pathologists are experts in most subspecialty areas and offer complete services for all **Surgical Pathology**

needs. Their consultative reports are issued only after the clinical and radiological data have been integrated with the morphological findings and the tissue specimen has been analyzed using the most modern technologies. The clinical programs encompassed by Surgical Pathology include the following: Bone and Soft-Tissue Pathology, Breast Pathology, Dermatopathology, Endocrine, Head & Neck Pathology, Gastrointestinal Pathology, Genitourinary Pathology, Gynecologic Pathology, Hematopathology, Neuropathology, Ophthalmologic Pathology, Oral and Maxillofacial Pathology, Pediatric Pathology, Renal Pathology, and Thoracic Pathology.

Autopsy Pathology continues to contribute to medical practice and patient care by constantly honing and refining our understanding of the late stages of disease and assessing the efficacy of both diagnostics and therapeutic interventions. Causes of reproductive failure and inherited diseases responsible for life-threatening congenital defects are studied by our specialized neonatologists and pediatric pathologists. Our expertise and state-of-the-art facilities not only bring the obvious benefits to health care and education, but also help individual families by providing information (for example, about inherited predisposi-

tions, or about potential for contagion by infectious agents) that is useful to the surviving members of the family, and by providing objective answers to any questions they may have. Autopsy Services are free to patients affiliated with YNHH and available for a fee on patients treated outside the Yale Medical Center.

The Department of **Laboratory Medicine** collaborates with Yale Pathology Labs to provide a complete and extensive test menu for our clients. Besides routine tests, specialized consultation and tests include, but are not limited to, therapeutic drug monitoring, flow cytometry, special coagulation testing for bleeding disorders and hypercoagulable states, and advanced infectious disease testing including rapid virology diagnostics.

The DNA revolution in biology and the completion of the human genome sequence have propelled **Molecular Diagnostics** to the front lines of clinical care. Yale Pathology Labs were among the first to adopt these technologies and have developed an efficient laboratory devoted exclusively to state-of-the-art applications that can in many instances provide clear and objective answers to difficult diagnostic or prognostic dilemmas.

Personalized Medicine in Cancer Care

The delivery of cancer care is becoming ever more complex, involving multiple disciplines for the diagnosis and the treatment of patients. In response, Yale Pathology Labs and the Yale Cancer Center have developed multidisciplinary clinical programs to care for patients diagnosed with different types of cancer. These clinical programs allow physicians and specialists at Yale Cancer Center to focus their skills on each specific type of cancer, enabling them to provide superior care to our patients through a patient-friendly system of care led by a patient care coordinator. The internationally and nationally recognized faculty within the programs provide unparalleled cancer expertise and are leaders in both the treatment of cancers and the development of innovative treatment strategies.

The Tumor Profiling Lab (TPL) offers a 3 tiered system to optimize

delivery of molecular information while also including capacity for one of the most promising multi-gene panels as well as whole exome sequencing. Our tier 1 service is Taqman based and covers the most standard and actionable mutations in EGFR, KRAS, BRAF, and also a range of mutations in ERBB2, MEK1, NRAS, AKT1 and PIK3CA. This panel can be done on vanishingly small specimens and has a turnaround time of about 7 days. The 143 gene MATCH trial gene panel, also known as the Oncomine Cancer Panel is our tier 2 offering. This panel covers nearly all currently actionable genes and many more, and it also includes 22 common gene fusions. Further capabilities are provided in conjunction with Yale's Center for Genome Analysis, including the analysis of all protein coding regions of the genome (about 22,000 genes).

