Medical Oncology
Certification Examination Blueprint

Purpose of the exam

The exam is designed to evaluate the knowledge, diagnostic reasoning, and clinical judgment skills expected of the certified medical oncologist in the broad domain of the discipline. The ability to make appropriate diagnostic and management decisions that have important consequences for patients will be assessed. The exam may require recognition of common as well as rare clinical problems for which patients may consult a certified medical oncologist.

Exam content

Exam content is determined by a pre-established blueprint, or table of specifications. The blueprint is developed by ABIM and is reviewed annually and updated as needed for currency. Trainees, training program directors, and certified practitioners in the discipline are surveyed periodically to provide feedback and inform the blueprinting process.

The primary medical content categories of the blueprint are shown below, with the percentage assigned to each for a typical exam:

<table>
<thead>
<tr>
<th>Medical Content Category</th>
<th>% of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticancer Therapeutics, Clinical Research Methodology, and Ethics</td>
<td>9.5%</td>
</tr>
<tr>
<td>Palliative Care, Survivorship, and Communication</td>
<td>11%</td>
</tr>
<tr>
<td>Genetics, Genomics, and Tumor Biology</td>
<td>2%</td>
</tr>
<tr>
<td>Hematologic Neoplasms</td>
<td>14%</td>
</tr>
<tr>
<td>Thoracic Cancer</td>
<td>11%</td>
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<tr>
<td>Breast Cancer</td>
<td>13%</td>
</tr>
<tr>
<td>Genitourinary Cancer</td>
<td>12%</td>
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<tr>
<td>Gynecologic Cancer</td>
<td>4%</td>
</tr>
<tr>
<td>Gastrointestinal Cancer</td>
<td>13.5%</td>
</tr>
<tr>
<td>Skin Cancer, Sarcomas, and Unknown Primary Site</td>
<td>6%</td>
</tr>
<tr>
<td>Head, Neck, Thyroid, and Central Nervous System Malignancies</td>
<td>4%</td>
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<tr>
<td></td>
<td>100%</td>
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</tbody>
</table>
**Exam format**

The exam is composed of up to 240 single-best-answer multiple-choice questions, of which approximately 40 are new questions that do not count in the examinee’s score. Most or all of the multiple-choice questions will be in the single-best-answer format; a small number may be multiple-response questions that require the selection of two or three correct options. The specific number of options to select will be indicated in text of the multiple-response questions.

Questions ask about the work done (that is, tasks performed) by physicians in the course of practice:

- Making a diagnosis
- Ordering and interpreting results of tests
- Recommending treatment or other patient care
- Assessing risk, determining prognosis, and applying principles from epidemiologic studies
- Understanding the underlying pathophysiology of disease and basic science knowledge applicable to patient care

Clinical information presented may include patient photographs, radiographs, computed tomograms, photomicrographs, magnetic resonance images, an equianalgesic table, bone scans, family pedigree charts, nomograms, and other media to illustrate relevant patient findings. [Learn more information on how exams are developed.](http://www.abim.org/certification/exam-information/medical-oncology/exam-tutorial.aspx)

A tutorial including examples of ABIM exam question format can be found at [http://www.abim.org/certification/exam-information/medical-oncology/exam-tutorial.aspx](http://www.abim.org/certification/exam-information/medical-oncology/exam-tutorial.aspx).

The blueprint can be expanded for additional detail as shown below. Each of the medical content categories is listed there, and below each major category are the content subsections and specific topics that *may* appear in the exam. **Please note:** actual exam content may vary.

<table>
<thead>
<tr>
<th>Anticancer Therapeutics, Clinical Research Methodology, and Ethics</th>
<th>9.5% of Exam</th>
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<tbody>
<tr>
<td><strong>Principles of allied disciplines</strong></td>
<td>&lt;2%</td>
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<tr>
<td>Surgical oncology</td>
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<tr>
<td>Radiation oncology</td>
<td></td>
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<tr>
<td>Interventional radiology</td>
<td></td>
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<tr>
<td>Pathology</td>
<td></td>
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</tbody>
</table>
Anticancer therapeutics

Cytotoxic chemotherapy agents
- Alkylating agents
- Antimetabolites
- Antitubulin agents
- Anthracyclines
- Topoisomerase I inhibitors
- Topoisomerase II inhibitors
- Bleomycin and other DNA-damaging agents

Chemotherapy-drug interactions

Hormonal therapies
- Estrogens and selective estrogen response modifiers
- Progestins and antiprogestins
- Aromatase inhibitors
- Androgens and antiandrogens
- Gonadotropin-releasing hormone analogues
- Glucocorticoids

Small molecule kinase inhibitors
- BCR-ABL1 inhibitors
- Epidermal growth factor receptor (EGFR) inhibitors
- Vascular endothelial growth factor receptor (VEGFR)/multitargeted inhibitors
- BRAF inhibitors
- Anaplastic lymphoma kinase (ALK) and mesenchymal epithelial transition (MET) growth factor inhibitors
- RET, ROS1, and NTRK inhibitors
- Mitogen-activated protein kinase (MEK) inhibitors
- Bruton tyrosine kinase (BTK) inhibitors
- Janus kinase (JAK) inhibitors
- Phosphoinositide-3 kinase (PI3K) inhibitors
- Mammalian target of rapamycin (mTOR) inhibitors
- Cyclin-dependent kinase (CDK) inhibitors

Agents with epigenetic activity
- Histone deacetylase (HDAC) inhibitors
- DNA methyltransferase inhibitors

Metabolic inhibitors other than antimetabolites

Monoclonal antibodies and antibody conjugates other than immune checkpoint inhibitors
- Monoclonal antibodies targeting EGFR, HER2, HER3, HER4
- Monoclonal antibodies targeting VEGFR pathway
Monoclonal antibodies targeting B cell antigens (including CD20)
Monoclonal antibodies targeting interleukin-6 (IL-6)
Bispecific monoclonal antibodies
Monoclonal antibody immune checkpoint inhibitors
   Agents targeting cytotoxic T-lymphocyte-associated antigen 4 (CTLA4)
   Agents targeting programmed cell death protein 1 (PD-1)
   and programmed cell death ligand 1 (PD-L1)
Tumor vaccines and viral-based immunotherapeutics
Cytokines
Agents with other novel or specific targets
   Proteasome inhibitors
   Immunomodulatory drugs (IMiDs)
   Hedgehog (Hh) inhibitors
   Poly(ADP-ribose) polymerase (PARP) inhibitors
   Arsenicals
Cellular therapeutics
   High-dose therapy with stem cell rescue
   (autologous and allogeneic)
   Chimeric antigen receptor (CAR) T-cell therapy

Clinical research methodology and ethics <2%
   Clinical research methodology
   Design and interpretation of clinical trials
   Tumor assessment, imaging, and end points
   Surrogate end points
   Ethics
   Human subjects and regulatory and legal issues
   Physician behavior and conflict of interest

Palliative Care, Survivorship, and Communication 11% of Exam
   Clinical manifestations of advanced cancer and its treatment 4.5%
   Cutaneous and mucosal manifestations
      Oral mucositis
      Rash
      Xerostomia
   Endocrine manifestations
   Gastrointestinal manifestations
      Ascites and peritoneal metastases
      Liver manifestations
Constipation
Diarrhea
Nausea and vomiting
Bowel obstruction
Esophagitis
Dysphagia

Hematologic manifestations
  Bleeding
  Thrombosis
  Cytopenia (Neutropenia)
  Anemia
  Transfusion reactions

Musculoskeletal manifestations

Neurologic manifestations
  Spinal cord compression
  Neuropathy
  Increased intracranial pressure
  Progressive multifocal leukoencephalopathy
  Radiation-related toxicity

Renal, metabolic, and nutritional manifestations
  Tumor lysis syndrome
  Hypercalcemia
  Hyponatremia
  Nutritional support

Paraneoplastic syndromes

Cardiothoracic manifestations
  Pleural and pericardial effusions
  Pneumonitis
  Dyspnea
  Cough
  Superior vena cava syndrome

Fatigue

Psychiatric manifestations
  Depression
  Anxiety
  Delirium

Infectious risks and complications
  Infections
  Febrile neutropenia

Lymphedema
Cancer pain 2%
Use of opioids
Use of nonopioids

Survivorship issues <2%
Fertility and sexual health
Second primary cancers
Secondary cancer prevention
Nonmalignant sequelae
Surveillance

End-of-life issues 2%
Hospice
Feeding and nutrition
Decision making

Procedure-related issues <2%
Chemotherapy administration
Bone marrow aspiration, biopsy, and interpretation
Tumor assessment
Thoracentesis
Paracentesis
Feeding tubes

Communication <2%
Communicating prognosis and other clinical information
Discussing goals of care
Discussing survivorship issues

Genetics, Genomics, and Tumor Biology 2% of Exam

Cancer biology and genetics <2%
Carcinogenesis
Genomics

Tumor immunology <2%

Heritable cancer syndromes <2%
Li-Fraumeni syndrome (TP53)
BRCA1 and BRCA2 syndromes
Familial colorectal cancer
  Familial adenomatous polyposis
  Hereditary nonpolyposis colorectal cancer
Multiple endocrine neoplasia and familial medullary thyroid cancer syndromes

Cancer epidemiology <2%
### Hematologic Neoplasms 14% of Exam

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute leukemia and myelodysplasia</strong></td>
<td>3%</td>
</tr>
<tr>
<td>Acute myeloid leukemia (AML)</td>
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<tr>
<td>Acute promyelocytic leukemia (APL)</td>
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<tr>
<td>AML with recurrent genetic abnormalities</td>
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<tr>
<td>AML with myelodysplasia-related changes</td>
<td></td>
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<tr>
<td>Therapy-related myeloid neoplasms</td>
<td></td>
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<tr>
<td>AML not otherwise specified</td>
<td></td>
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<tr>
<td>Myeloid sarcoma</td>
<td></td>
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<tr>
<td>Acute lymphoblastic leukemia/lymphoma</td>
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<tr>
<td>Myelodysplastic syndromes</td>
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<tr>
<td>Chronic myelomonocytic leukemia</td>
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<tr>
<td><strong>Chronic myeloid leukemia and myeloproliferative neoplasms</strong></td>
<td>2%</td>
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<tr>
<td>Chronic myeloid leukemia</td>
<td></td>
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<tr>
<td>Myeloproliferative neoplasms</td>
<td></td>
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<tr>
<td><strong>Chronic lymphoproliferative leukemias</strong></td>
<td>2%</td>
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<tr>
<td>Chronic lymphocytic leukemia/small lymphocytic lymphoma</td>
<td></td>
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<tr>
<td>Hairy cell leukemia</td>
<td></td>
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<tr>
<td>T-cell prolymphocytic leukemia</td>
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<tr>
<td>T-cell large granular lymphocytic leukemia</td>
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<tr>
<td>Monoclonal B-cell lymphocytosis</td>
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<tr>
<td><strong>Hodgkin lymphoma</strong></td>
<td>&lt;2%</td>
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<tr>
<td>Early-stage disease</td>
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<tr>
<td>Advanced disease</td>
<td></td>
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<tr>
<td><strong>Multiple myeloma and plasma cell dyscrasias</strong></td>
<td>2%</td>
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<tr>
<td>Multiple myeloma/plasma cell leukemia</td>
<td></td>
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<tr>
<td>Solitary plasmacytoma</td>
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<tr>
<td>Primary amyloidosis</td>
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<tr>
<td>Cryoglobulinemia</td>
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<tr>
<td>Monoclonal gammopathy of undetermined significance (MGUS)</td>
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<tr>
<td>Lymphoplasmacytic lymphoma (including Waldenström macroglobulinemia)</td>
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<tr>
<td><strong>Non-Hodgkin lymphoma</strong></td>
<td>4%</td>
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<tr>
<td>Diffuse large B-cell lymphoma</td>
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<tr>
<td>Follicular lymphoma</td>
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<tr>
<td>Burkitt lymphoma</td>
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<tr>
<td>Mantle cell lymphoma</td>
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</tr>
<tr>
<td>NK-T cell lymphoma</td>
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<tr>
<td>Anaplastic large cell lymphoma</td>
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</tbody>
</table>
Extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT lymphoma)
Nodal marginal zone lymphoma
Human immunodeficiency virus (HIV)-associated lymphoma
Human T-cell lymphotropic virus type 1-associated lymphoma (adult T-cell leukemia/lymphoma)
Cutaneous T-cell lymphoma
Primary central nervous system lymphoma
Post-transplantation lymphoproliferative syndromes
Peripheral T-cell lymphoma

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**Thoracic Cancer**  **11% of Exam**

**Non-small cell lung cancer**  
Early-stage disease  
Resectable disease  
Unresectable disease  
Locally advanced disease  
Stage IIIA disease  
Stage IIIB disease  
Stage IIIC disease  
Pancoast tumor  
Metastatic disease  
Adenocarcinoma  
Squamous cell carcinoma

**Small cell lung cancer**  
Limited disease  
Extensive disease

**Mesothelioma and thymus cancer**  
Mesothelioma  
Thymus cancer

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**Breast Cancer**  **13% of Exam**

**Premalignant conditions and high-risk factors**  
High-risk histologies (including atypical ductal hyperplasia and atypical lobular hyperplasia)  
Genetic predispositions and other high-risk features

**Carcinoma in situ**  
<2%

**Early-stage and locally advanced invasive carcinoma**  
HER2-positive disease  
Limited disease  
Extensive disease  
Stage IIIA disease  
Stage IIIB disease  
Stage IIIC disease  
Pancoast tumor  
Metastatic disease  
Adenocarcinoma  
Squamous cell carcinoma

<2%
HER2-negative, hormone receptor–positive disease
HER2-negative, hormone receptor–negative, (triple-negative) disease

**Inflammatory disease** <2%

**Locally recurrent disease** <2%
  - In-breast recurrence
  - Chest wall recurrence

**Metastatic disease** 4.5%
  - HER2-positive metastatic disease
  - HER2-negative, hormone receptor–positive metastatic disease
  - HER2-negative, hormone receptor–negative, (triple-negative) metastatic disease

**Less common clinical scenarios** <2%
  - Tubular carcinoma
  - Male breast cancer
  - Pregnancy-associated breast cancer

<table>
<thead>
<tr>
<th>Genitourinary Cancer</th>
<th>12% of Exam</th>
</tr>
</thead>
</table>

**Germ cell tumors** <2%
  - Seminoma
  - Nonseminoma
  - Germ cell tumor type not specified

**Prostate cancer** 5%
  - Localized disease
  - Locally advanced disease
  - Prostate-specific antigen-only nonmetastatic disease
    - Castration-sensitive disease
    - Castration-resistant disease
  - Metastatic disease
    - Metastatic castration-sensitive disease
    - Metastatic castration-resistant disease
  - Special issues in prostate cancer
    - Small cell carcinoma

**Renal cell cancer** 2.5%
  - Localized disease
  - Metastatic disease
  - Special issues in renal cell cancer
    - Bilateral renal tumors
    - Non-clear cell histologies
Urothelial and other genitourinary cancers 2.5%
Bladder cancer
  Non-muscle-invasive disease
  Muscle-invasive disease
  Metastatic disease
Other urothelial cancers
  Upper tract urothelial cancer
  Urethral cancer

Adrenal tumors <2%
  Adrenocortical carcinoma
  Pheochromocytoma and paraganglioma
  Adrenal metastasis

### Gynecologic Cancer 4% of Exam

**Cervical cancer** <2%
  Local-regional disease (stages II and III)
  Recurrent and metastatic disease

**Ovarian, fallopian tube, and primary peritoneal cancers** 2%
  Epithelial ovarian, fallopian tube, and primary peritoneal cancers
    Stage I
    Stages II-IV
  Nonepithelial ovarian cancers
  Low malignant potential (borderline) cancers

**Other gynecologic malignancies** <2%
  Endometrial cancer
  Uterine sarcoma
  Gestational trophoblastic disease
  Cancers of the vulva and vagina

### Gastrointestinal Cancer 13.5% of Exam

**Anal cancer** <2%
  Local-regional disease
  Recurrent and metastatic disease

**Biliary tree and gallbladder cancer** <2%
  Local-regional disease
  Recurrent and metastatic disease
Colorectal cancer 4.5%
  Colon cancer
    Local-regional disease
    Recurrent and metastatic disease
  Rectal cancer
    Local-regional disease
    Recurrent and metastatic disease

Esophageal cancer <2%
  Local-regional disease
  Recurrent and metastatic disease

Gastric cancer <2%
  Resectable disease
  Unresectable and metastatic disease

Hepatocellular cancer <2%
  Resectable disease
  Unresectable, liver-only disease
  Metastatic disease

Gastrointestinal neuroendocrine tumors <2%

Pancreatic cancer 3%
  Resectable disease
  Unresectable disease
  Metastatic and recurrent disease

Small bowel and appendiceal cancer <2%
  Small bowel cancer
  Appendiceal cancer

Skin Cancer, Sarcomas, and Unknown Primary Site 6% of Exam

Melanoma 2%
  Invasive melanoma
  Regional nodal and in-transit metastasis
  Metastatic disease

Other skin cancers <2%
  Squamous cell and basal cell cancer of the skin
    Local-regional disease
    Recurrent and metastatic disease
  Merkel cell carcinoma

Bone and soft-tissue sarcomas <2%
  Localized primary disease
  Local disease recurrence
  Metastatic disease
Gastrointestinal stromal tumor (GIST)
  Local-regional disease
  Recurrent and metastatic disease

Unknown primary site 2%

<table>
<thead>
<tr>
<th>Head, Neck, Thyroid, and Central Nervous System Malignancies</th>
<th>4% of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Squamous cell carcinoma of the head and neck</strong></td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Human papillomavirus–positive disease</td>
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<tr>
<td>Local-regional disease</td>
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<tr>
<td>Recurrent and metastatic disease</td>
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<tr>
<td>Human papillomavirus–negative disease</td>
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<tr>
<td>Local-regional disease</td>
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<tr>
<td>Recurrent and metastatic disease</td>
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<tr>
<td><strong>Salivary gland tumors</strong></td>
<td>&lt;2%</td>
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<tr>
<td><strong>Thyroid cancer</strong></td>
<td>&lt;2%</td>
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<tr>
<td>Papillary</td>
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<tr>
<td>Medullary</td>
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<tr>
<td>Anaplastic</td>
<td></td>
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<tr>
<td><strong>Nasopharyngeal carcinoma</strong></td>
<td>&lt;2%</td>
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<tr>
<td>Local and regional disease</td>
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<tr>
<td>Metastatic disease</td>
<td></td>
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<tr>
<td><strong>Central nervous system malignancies</strong></td>
<td>&lt;2%</td>
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<tr>
<td>Primary central nervous system lesions</td>
<td></td>
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<tr>
<td>High-grade gliomas (astrocytoma and glioblastoma)</td>
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<tr>
<td>Oligodendroglioma and other central nervous system lesions</td>
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<tr>
<td>Metastatic central nervous system lesions</td>
<td></td>
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<tr>
<td>Parenchymal metastases</td>
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<td>Meningeal metastases</td>
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January 2023