

INCIDENCE AND RISK FACTORS CHILDHOOD CANCER TYPES

%*	CANCER TYPE (COMMON SUBTYPES)	SELECTED RISK FACTORS	COMMON PRESENTING SYMPTOMS
25	Leukemias , (Acute Lymphoblastic [ALL], Acute Myelogenous [AML], Chronic Myelogenous [CML])	Down, Bloom, Shwachman, Immunodeficiency, Neurofibromatosis, Ataxia Telangiectasia [ALL], Cancer Treatment [AML]	Bleeding, Bruising, Persistent pain, Fever, Fatigue, Pallor, Hepatomegaly, Splenomegaly, Lymphadenopathy, Repeated infections, Weight loss
17	Central Nervous System Tumors , (Malignant Glioma, Medulloblastoma/ Primitive Neuroectodermal Tumor (PNET), Ependymoma, Germ cell)	Neurofibromatosis, Tuberous Sclerosis, Li-Fraumeni, Turcot	Headache, Vomiting, Ataxia, Blurred vision, Double vision, Seizures, Discoordination, Enlarging head
16	Lymphomas , (Hodgkin Lymphoma, Non-Hodgkin Lymphoma)	Immunodeficiency	Lymphadenopathy (Especially cervical, axillary, inguinal), Fever, Fatigue, Pallor, Weight loss
9	Carcinomas and Epithelial Tumors , (Melanoma, Thyroid Cancer, Nasopharyngeal ca)	Sun exposure, Radiation to neck	Changes in moles, Nevi, Thyroid enlargement, Evidence of Hyper or Hypothyroidism
7	Germ Cell Tumors (Testicular, Ovarian, Extra-Gonadal)	Cryptorchidism	Precocious puberty, swelling or mass in testicles, pelvic mass
7	Soft Tissue Sarcomas (Rhabdomyosarcoma, Extra-Osseous Ewing/PNET)	Congenital anomalies, Li-Fraumeni, Neurofibromatosis	Mass or swelling in soft Tissues, Abdomen, Pelvis, Proptosis
6	Malignant Bone Tumors (Osteosarcoma [OS], Ewing Sarcoma [ES])	Li-Fraumeni [OS], Retinoblastoma [OS], Cancer Therapy [OS]	Swelling in bone, Limp, bone pain, Pathologic fracture [OS,ES] Fever [ES]
5	Sympathetic Nervous System Tumors (Neuroblastoma)	Familial Neuroblastoma	Mass in abdomen, Neck, Chest, Orbits, Pallor, Bruising, Pain, Unusual head movements
4	Renal Tumors , (Wilms Tumor [WT]), (Clear Cell Sarcoma of the kidney [CCSK], Renal Cell Carcinoma [RCC])	Wilms tumor, Aniridia, Genito-urinary abnormalities or Gonadoblastoma & Mental Retardation (WAGR); Aniridia; Nephroblastomatosis; Genitourinary Anomalies; Beckwith-Wiedemann; Perlman; Denys-Drasch	Abdominal mass, Flank mass, Hematuria, Hypertension
2	Retinoblastoma	Familial Retinoblastoma, 13q Deletion Syndrome	Leukocoria, Strabismus, Sudden change in vision
1	Hepatic Tumors (Hepatoblastoma, Hepatocellular Carcinoma)	Beckwith-Wiedemann, Hemihypertrophy, Familial Polyposis, Very low birth weight	Upper abdominal mass, Hepatomegaly
1	Other Tumors		Various (rare tumors)

(* Source: SEER data 1985-1995 Percentages refer to the relative frequency of childhood and adolescent malignancies)

SIGNS OF POSSIBLE CHILDHOOD CANCER

Approximately 1200 Texas children and adolescents are diagnosed with cancer each year. The key to early detection of childhood cancer is a “high index of suspicion” on the part of caregivers. Children and adolescents with suspected malignancies should be referred to pediatric oncology programs that participate in cooperative group studies.

SIGNS AND SYMPTOMS	NON-MALIGNANT	MALIGNANT
Abdominal Mass	Benign tumor, Duplication Intestinal anomaly	Wilms Tumor, Neuroblastoma Soft tissue sarcoma
Bone pain Limping	Injury , Tendonitis, Infection, Rheumatologic disease	Bone tumor, Leukemia, Neuro- blastoma, Bone lymphoma Metastatic tumor
Bruises/Bleeding	Factor deficiency, Immune Thrombocytopenia Henoch- Schoenlein, purpura	Leukemia, Neuroblastoma
Headache, Morning Vomiting	Migraine Headache, Pseudotumor	Brain tumor
Hepatomegaly	Infection, Storage disease	Liver tumor, Leukemia, Lymphoma
Lymphadenopathy	Infection, Immune disorder	Leukemia, Neuroblastoma, Lymphoma
Muscle Mass	Benign tumor, Trauma	Sarcoma
Pallor, Fatigue, Fever	Infection, Aplastic anemia	Leukemia, Neuroblastoma
Pelvic Mass	Hydrometrocolpos, Bladder obstruction, Benign cyst or tumor, Pregnancy	Ovarian tumor, Soft tissue sarcoma, Malignant teratoma Ewing sarcoma/primitive neu- roectodermal tumor (PNET)
Splenomegaly	Autoimmune Lymphoprolif- erative Syndrome (ALPS), Infection, Storage disease	Leukemia, Lymphoma
Testicular Mass	Hernia, Testicular torsion	Testicular tumor, Leukemia
White Eye Reflex	Retinal detachment, Cataract	Retinoblastoma