Malignant histiocytosis, also known as disseminated histiocytic sarcoma, is a cancer of immune cells that are involved in identifying foreign material and presenting antigens to the rest of the immune system. There are several different forms of histiocytosis in dogs: histiocytoma, reactive histiocytosis and localized and disseminated histiocytic sarcomas. Histiocytomas are benign, raised lesions that form in the skin of young (typically <3 years), predisposed dog breeds (boxers, dachshunds, cocker spaniels, Great Danes, Shetland sheepdogs). These will resolve on their own without any treatment. Reactive histiocytosis is an overabundance of histiocytic cells that may form localized skin lesions, or also be found as lesions in various internal organs. These disease differs from the sarcoma form because lesions may wax and wane with time. Malignant histiocytosis is a truly malignant disease characterized by dysplastic, immature histiocytes that invade multiple organs. Most common organs involved are the liver and spleen, however, bone marrow, lungs, lymph nodes and other organs can be involved. Cutaneous lesions around the joints are typical for localized histiocytic sarcoma, with rapid progression of metastases in distant locations. Breeds that are at highest risk for this disease are Bernese Mountain dogs, Rottweilers, and Flat-coated, Golden and Labrador retrievers. A diagnosis can be made off of fine needle aspiration of lesions within internal organs or cutaneous lesions. Often times the cells appear as indiscernible round cells, and so further characterization through special staining (i.e. immunohistochemistry) may be required to get a definitive diagnosis. Further diagnostic tests, including blood tests, radiographs and ultrasound imaging, are essential for predicting prognosis. Treatment involves chemotherapy, or combinations of radiation and chemotherapy. One small study has shown potential benefit for immunotherapy, but more studies are required to validate the efficacy of this therapeutic option. Prognosis is poor for both the disseminated and localized forms of histiocytic sarcoma with reported median survival times between 106 days - 5 months depending on treatments pursued and several other factors.

Malignant histiocytosis is a rare disease in people. Similar to dogs the disease is rapidly progressive. Treatment involves combinations of chemotherapeutics with very little efficacy. People also develop benign forms similar to canine histiocytomas, which are self-limiting.