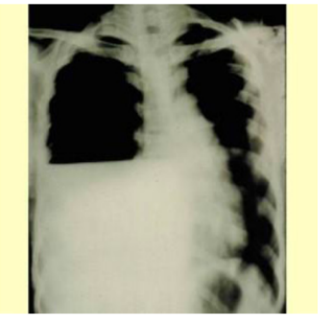
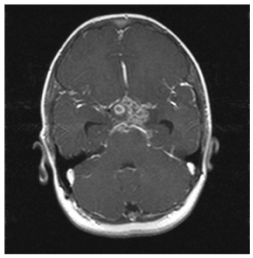
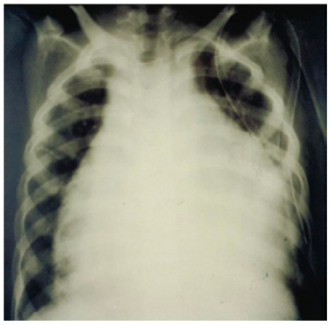
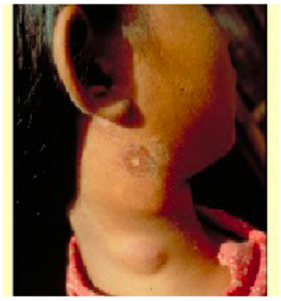
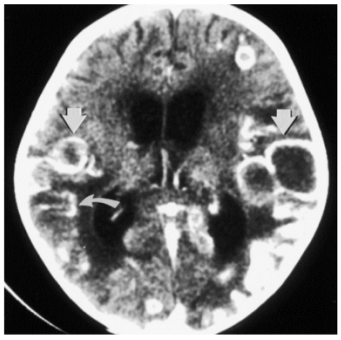
Tuberculosis - extrapulmonary

TB can affect all body tissues except the hair, nails and the teeth (enamel). The diagnosis of extra-pulmonary TB largely depends on the health worker index of suspicion as well as the ability of the health worker to conduct appropriate investigations to rule out other differential diagnoses. The tabe below is a summary of some of the common forms of EPTB and the diagnostic approaches to confirm TB diagnosis.

Table 3.6: Common Forms of Extrapulmonary TB and Diagnostic Approach

Form of Extra Pulmonary TB	Signs and Symptoms	Diagnosis
Pleural TB with Pleural Effusion 	Tuberculous pleural effusion usually presents with: • Local chest symptoms that include chest pain, Shortness of breath. • Cough and systemic symptoms including fever and night sweats. • "stony" dullness on percussion • Reduced breath sounds on the side of the effusion.	• Chest x-ray is often required to confirm the presence of the effusion. When effusion is small a supplemental lateral decubitus view or ultrasound on the suspected side of effusion may be performed. • It is also advisable, if the expertise exists, to always perform a diagnostic pleural aspiration at the minimum to distinguish pus (empyema) from "usual" effusion. Aspirated fluid should be sent to the laboratory for cytology and microbiological tests including GeneXpert and TB Culture. • A pleural biopsy is rarely required in young patients below the age of 40 years. • Older patients and especially those with a significant smoking history may have other diagnoses and in these patients it is advisable to perform a pleural biopsy using an Abrahm's needle.
Tuberculous Peritonitis and Ascites 	Tuberculous Peritonitis and Ascites usually presents with: • abdominal pain and swelling • disturbance of bowel motion i.e., constipation or diarrhea • fever.	• Ultrasonography may show matted loops of bowel with free fluid. • Peritoneal biopsy rarely done: many of these end up with a surgical biopsies during laparotomy.

Tuberculous Meningitis	This disease is often very difficult to diagnose and requires a very high index of clinical suspicion. This disease presents with: 1. Prodromal phase - mild headache, fever, malaise 2. Meningitic phase - headache, vomiting, confusion, meningismus 3. Paralytic phase - stupor, coma, seizures, hemiparesis	The diagnosis of tuberculous meningitis is made by: • Examination of cerebrospinal fluid (CSF) obtained following a lumbar puncture: • CSF stain positive for mycobacterium or CSF GeneXpert positive. • CT Scan of the brain which shows basal meningitis, tuberculomas and development of hydrocephalus.
Tuberculous Pericarditis 	Tuberculous pericarditis is increasingly becoming common in the HIV era and it may present with a variety of symptoms including: • Shortness of breath (the most common symptom). • Chest pain. • Cough. • Leg swelling. • Fever. • Usually has a high pulse rate (tachycardia). • May have a low blood pressure, impalpable apex beat, quiet heart sounds and signs of heart failure like a large liver, ascites and leg edema.	• A chest x-ray is always required and usually shows **a large globular heart.** • Where feasible patients suspected to have a pericardial effusion should be referred to a heart specialist for confirmation of the diagnosis using echocardiography. • A pericardial tap for diagnostic purpose is rarely required but may be life saving if there are signs of cardiac compression (tamponade). This procedure must be done by experienced health care workers (cardiologists) only.

TB adenitis 	• Tuberculous adenitis is one of the common types of extra-pulmonary TB • Usually unilateral • Most common site is the cervical area • Painless swelling –initially discrete then matted • Fistula and sinus formation	• Node aspirate • Node biopsy for both histology and culture
TB encephalitis including Tuberculoma 	The clinical presentation is similar to that of other space occupying brain lesions and includes: • Headaches. • Vomiting. • Convulsions. • Limb weakness. • Cranial nerve palsies.	• Brain CT scans are useful in demonstrating lesions such as tuberculomas or cerebral infarcts. • MRI with contrast and spectroscopy is superior in the diagnosis of encephalitis, tuberculoma and spinal TB . • Often it is difficult to confirm the diagnosis of brain TB and most patients are treated on an empiric basis.
TB of the skin 	• *Lupus vulgaris:* Persistent and progressive form of cutaneous TB. It occurs as small sharply defined reddish-brown lesions with a gelatinous consistency (called apple jelly nodules). • Untreated, lesions persist for years, leading to disfigurement • *Scrofuloderma:* Skin lesions result from direct extension of underlying TB infection of lymph nodes, bone or joints. • Often associated with TB of the lungs. Firm, painless lesions that eventually ulcerate with a granular base. May heal even without treatment but this takes years and leaves unsightly scars.	• The diagnosis is usually made or confirmed by a skin biopsy. Typical tubercles are caseating epithelioid granulomas that contain acid-fast bacilli. These are detected by tissue staining, culture and polymerase chain reaction (PCR)

TB of the bones and Joints 	• TB can affect any bones or joints, primarily the large bones/ joints e.g hip (see pic on the left) and spine • The spine is affected in many instances with a characteristic 'gibbus' deformity of the spine.	• Diagnosis may be confirmed by bone biopsy for culture. However, in most instances, the characteristic radiographic findings with bone destruction while soft tissues are spared.
NOTE: When patients present with symptoms of TB disease and the health care worker is not able to make a diagnosis or when there are signs of severe disease, a rapid referral to the next appropriate level is highly recommended.		

Reference: Integrated Guideline for Tuberculosis, Leprosy and Lung Disease, 2021, MOH