

Skeletal	Aetiology	Clinical signs	Diagnosis and Treatment
Metabolic bone disease	<p>Rickets: young growing</p> <ul style="list-style-type: none"> - Vitamin D3 deficiency <ul style="list-style-type: none"> o Nutrition is deficient o Insufficient sunlight o Renal disease o Absorption gut absorption - Impair mineralisation of osteoid tissue/ epiphyseal cartilage → thinning/weakening of bones <ul style="list-style-type: none"> o Deformities at ends of bones, esp proximal tibiotarsus + beak, o Other: head of ribs, costochondral junctions - Radiographs: widening and distortion of growth plates <p>Nutritional 2° Hyperparathyroidism</p> <ul style="list-style-type: none"> - Diet: low Ca²⁺ and/or high P intake <ul style="list-style-type: none"> o Commercially available seed: Ca²⁺: P = 1:10 o Fruits, nuts, vegetables: low Ca²⁺ and high P - PTH: Ca²⁺ remove from bone and replaced with fibrous tissue <ul style="list-style-type: none"> o Folding fractures of the limbs, beak, and malformations 	<p>Risk factor</p> <ul style="list-style-type: none"> - Young animals: susceptible, esp hand-fed nestlings (in pets, aviculture and rehab setting) <ul style="list-style-type: none"> o Take in orphaned and feed on non-commercial or altered diet: not properly balanced o Birds generally develop very quickly, grow very fast - Insectivore: only fed unsupplemented insect - Carnivore: only fed meat with no bone → common in raptors, magpies, kookaburras - Laying hens: high Ca²⁺ demand 	<p><u>Diagnosis</u> History + palpation of skeletal system + radiography</p> <ul style="list-style-type: none"> - Bones look crooked/bend or legs in different length because of distortion → beak pliable <p><u>Treatment</u> Deemed prognosis</p> <ul style="list-style-type: none"> - Injectable Calcium → oral <p>Fractures</p> <ul style="list-style-type: none"> - Difficult to repair: soft → creating another fracture - Wait until bones are strong enough - In nestlings: place hobbles to help legs grow straighter <ul style="list-style-type: none"> o 2 long + 2 short tape and fold over long strips to stick to themselves o Place the 1st hobble above the hock and tape in place o Place the 2nd hobble below the hock and tape in place o Tape the 2hobble together, leaving limb in functional position (slightly flexed)

Ventriculus	Aetiology	Clinical signs	Diagnosis and Treatment
Gizzard issues	Mineralisation, neoplasia, viral, bacterial, mycotic, Bornavirus, Macrorhabdus.	Non-specific GI signs: melaena, whole seeds in droppings, anaemia <ul style="list-style-type: none"> - Haemorrhage as source: regenerative - Malnutrition anaemia: non-regenerative 	Palpation may reveal abnormality or enlargement <ul style="list-style-type: none"> - Sits below rib cage in most spp. Diagnosis <ul style="list-style-type: none"> - Aspirates of ventriculus and staining - Radiographs and contrast imaging <ul style="list-style-type: none"> o Contrast: looking for enlargement or dilation o Delayed emptying: contrast retained for longer than usual - Endoscopy via crop

Intestinal Disorders

Cause	Coccidiosis
Wide range of bacteria, nematodes, parasites <ul style="list-style-type: none"> - Dysbacteriosis: <ul style="list-style-type: none"> o Microbial balance in intestines is important - Disruption (e.g. antibiotics, poor diet) cause disease in intestine 	Important differential in birds with enteritis <ul style="list-style-type: none"> - Wild: oocysts are commonly found, often incidental - Captive pigeons: common if hygiene poor + stocking density high <ul style="list-style-type: none"> o Diarrhoea, weight loss, failure to thrive if heavy burden - Chickens esp intensive or backyard <ul style="list-style-type: none"> o Causes haemorrhagic enteritis o Commercial feed contain coccidiostats w. multiple spp o Diagnosis typically via post-mortem, or faecal exam if severe
Nematodes in Aviary Birds	Tapeworms (Finches)
<ul style="list-style-type: none"> - Treated with ivermectin or moxidectin: only when needed - May need to rotate worming protocols to avoid resistance - In-feed/water tx: common in large aviaries but inaccurate dosing <ul style="list-style-type: none"> o Increases risk of under-dosing and resistance - Emphasize quarantine, stocking density, and hygiene for control 	<ul style="list-style-type: none"> - Can present suddenly dead with no prior signs - Necropsy: full of tapeworms - Use praziquantel in flock treatment