## 4.1 Common symptoms of heart disease

| Symptom | Cardiovascular causes | Other causes |
|---|---|---|
| Chest discomfort | Myocardial infarction<br>Angina<br>Pericarditis<br>Aortic dissection | Oesophageal spasm<br>Pneumothorax<br>Musculoskeletal pain |
| Breathlessness | Heart failure<br>Valvular disease<br>Angina<br>Pulmonary embolism<br>Pulmonary hypertension | Respiratory disease<br>Anaemia<br>Obesity<br>Anxiety |
| Palpitation | Tachyarrhythmias<br>Ectopic beats | Anxiety<br>Hyperthyroidism<br>Drugs |
| Syncope/ presyncope | Arrhythmias<br>Postural hypotension<br>Aortic stenosis<br>Hypertrophic cardiomyopathy<br>Atrial myxoma | Simple faints<br>Epilepsy<br>Anxiety |
| Oedema | Heart failure<br>Constrictive pericarditis<br>Venous stasis<br>Lymphoedema | Nephrotic syndrome<br>Liver disease<br>Drugs<br>Immobility |

## 4.2 Canadian Cardiovascular Society: functional classification of stable angina

| Grade | Description |
|---|---|
| 1 | Ordinary physical activity, such as walking and climbing stairs, does not cause angina. Angina with strenuous, rapid or prolonged exertion at work or during recreation |
| 2 | Slight limitation of ordinary activity. Walking or climbing stairs rapidly, walking uphill, walking or climbing stairs after meals, in cold, in wind, or when under emotional stress, or only during the few hours after awakening |
| 3 | Marked limitation of ordinary physical activity. Walking 1–2 blocks on the level and climbing less than one flight in normal conditions |
| 4 | Inability to carry on any physical activity without discomfort; angina may be present at rest |

## 4.3 Cardiovascular causes of chest pain and their characteristics

| | Angina | Myocardial infarction | Aortic dissection | Pericardial pain | Oesophageal pain |
|---|---|---|---|---|---|
| Site | Retrosternal | Retrosternal | Interscapular/retrosternal | Retrosternal or left-sided | Retrosternal or epigastric |
| Onset | Progressive increase in intensity over 1–2 minutes | Rapid over a few minutes | Very sudden | Gradual; postural change may suddenly aggravate | Over 1–2 minutes; can be sudden (spasm) |
| Character | Constricting, heavy | Constricting, heavy | Tearing or ripping | Sharp, 'stabbing', pleuritic | Gripping, tight or burning |
| Radiation | Sometimes arm(s), neck, epigastrium | Often to arm(s), neck, jaw, sometimes epigastrium | Back, between shoulders | Left shoulder or back | Often to back, sometimes to arms |
| Associated features | Breathlessness | Sweating, nausea, vomiting, breathlessness, feeling of impending death (angor animi) | Sweating, syncope, focal neurological signs, signs of limb ischaemia, mesenteric ischaemia | Flu-like prodrome, breathlessness, fever | Heartburn, acid reflux |
| Timing | Intermittent, with episodes lasting 2–10 minutes | Acute presentation; prolonged duration | Acute presentation; prolonged duration | Acute presentation; variable duration | Intermittent, often at night-time; variable duration |
| Exacerbating/ relieving factors | Triggered by emotion, exertion, especially if cold, windy<br>Relieved by rest, nitrates | 'Stress' and exercise rare triggers, usually spontaneous<br>Not relieved by rest or nitrates | Spontaneous<br>No manœuvres relieve pain | Sitting up/lying down may affect intensity<br>NSAIDs help | Lying flat/some foods may trigger<br>Not relieved by rest; nitrates sometimes relieve |
| Severity | Mild to moderate | Usually severe | Very severe | Can be severe | Usually mild but oesophageal spasm can mimic myocardial infarction |
| Cause | Coronary atherosclerosis, aortic stenosis, hypertrophic cardiomyopathy | Plaque rupture and coronary artery occlusion | Thoracic aortic dissection rupture | Pericarditis (usually viral, also post myocardial infarction) | Oesophageal spasm, reflux, hiatus hernia |

NSAIDs, *non-steroidal anti-inflammatory drugs.*

## 4.4 Some mechanisms and causes of heart failure

| Mechanism | Cause |
|---|---|
| Reduced ventricular contractility (systolic dysfunction) | Myocardial infarction<br>Dilated cardiomyopathy, e.g. genetic, idiopathic, alcohol excess, cytotoxic drugs, peripartum cardiomyopathy<br>Myocarditis |
| Impaired ventricular filling (diastolic dysfunction) | Left ventricular hypertrophy<br>Constrictive pericarditis<br>Hypertrophic or restrictive cardiomyopathy |
| Increased metabolic and cardiac demand (rare) | Thyrotoxicosis<br>Arteriovenous fistulae<br>Paget's disease |
| Valvular or congenital lesions | Mitral and/or aortic valve disease<br>Tricuspid and/or pulmonary valve disease (rare)<br>Ventricular septal defect<br>Patent ductus arteriosus |

## 4.5 New York Heart Association classification of heart failure symptom severity

| Class | Description |
|---|---|
| I | No limitations. Ordinary physical activity does not cause undue fatigue, dyspnoea or palpitation (asymptomatic left ventricular dysfunction) |
| II | Slight limitation of physical activity. Such patients are comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnoea or angina pectoris (symptomatically 'mild' heart failure) |
| III | Marked limitation of physical activity. Less than ordinary physical activity will lead to symptoms (symptomatically 'moderate' heart failure) |
| IV | Symptoms of congestive heart failure are present, even at rest. With any physical activity, increased discomfort is experienced (symptomatically 'severe' heart failure) |

## 4.6 Descriptions of arrhythmias

| | Extrasystoles | Sinus tachycardia | Supraventricular tachycardia | Atrial fibrillation | Ventricular tachycardia |
|---|---|---|---|---|---|
| Site | – | – | – | – | – |
| Onset | Sudden | Gradual | Sudden, with 'jump' | Sudden | Sudden |
| Character | 'Jump', missed beat or flutter | Regular, fast, 'pounding' | Regular, fast | Irregular, usually fast; slower in elderly | Regular, fast |
| Radiation | – | – | – | – | – |
| Associated features | Nil | Anxiety | Polyuria, lightheadedness, chest tightness | Polyuria, breathlessness Syncope uncommon | Presyncope, syncope, chest tightness |
| Timing | Brief | A few minutes | Minutes to hours | Variable | Variable |
| Exacerbating/ relieving factors | Fatigue, caffeine, alcohol may trigger Often relieved by walking (increases sinus rate) | Exercise or anxiety may trigger | Usually at rest, trivial movements, e.g. bending, may trigger Vagal manœuvres may relieve | Exercise or alcohol may trigger; often spontaneous | Exercise may trigger; often spontaneous |
| Severity | Mild (usually) | Mild to moderate | Moderate to severe | Very variable, may be asymptomatic | Often severe |

## 4.7 Symptoms related to medication

| Symptom | Medication |
|---|---|
| Angina | Aggravated by thyroxine or drug-induced anaemia, e.g. aspirin or NSAIDs |
| Dyspnoea | Beta-blockers in patients with asthma<br>Exacerbation of heart failure by beta-blockers, some calcium channel antagonists (verapamil, diltiazem), NSAIDs |
| Palpitation | Tachycardia and/or arrhythmia from thyroxine, $\beta_2$ stimulants, e.g. salbutamol, digoxin toxicity, hypokalaemia from diuretics, tricyclic antidepressants |
| Syncope/ presyncope | Vasodilators, e.g. nitrates, alpha-blockers, ACE inhibitors and angiotensin II receptor antagonists<br>Bradycardia from rate-limiting agents, e.g. beta-blockers, some calcium channel antagonists (verapamil, diltiazem), digoxin, amiodarone |
| Oedema | Glucocorticoids, NSAIDs, some calcium channel antagonists, e.g. nifedipine, amlodipine |

ACE, *angiotensin-converting enzyme;* NSAIDs, *non-steroidal anti-inflammatory drugs.*

## 4.8 Key elements of the past cardiac history

| | Ischaemic heart disease | Heart failure | Valvular disease |
|---|---|---|---|
| Baseline symptoms | Exertional angina? If so, ascertain functional limitation (see Box 4.2)/response to GTN spray | Dyspnoea, fatigue, ankle swelling<br>Record usual functional status (see Box 4.5) | Often asymptomatic<br>Exertional dyspnoea (common), chest pain or syncope |
| Major events | Previous myocardial infarction/unstable angina | Hospitalisation for decompensated heart failure<br>Ventricular arrhythmias | Infective endocarditis<br>Previous rheumatic fever |
| Investigations | Coronary angiography (invasive or computed tomography): presence, extent and severity of coronary artery disease<br>Exercise electrocardiogram (or other stress test): evidence of inducible ischaemia?<br>Exercise capacity and symptoms | Echocardiogram (± cardiac magnetic resonance imaging): left ventricular size, wall thickness and systolic function; valvular disease; right ventricular function | Echocardiogram (transthoracic ± transoesophageal): nature and severity of valve lesion; ventricular size and function |
| Procedures | Percutaneous coronary intervention (angioplasty and stenting)<br>Coronary artery bypass graft surgery | Implantable cardioverter–defibrillator<br>Cardiac resynchronisation therapy | Surgical valve repair or replacement (note whether mechanical or bioprosthetic)<br>Transcatheter valve procedures |

GTN, *glyceryl trinitrate.*

## 4.9 Causes of abnormal pulse rate or rhythm

| Abnormality | Sinus rhythm | Arrhythmia |
|---|---|---|
| Fast rate (tachycardia, >100 bpm) | Exercise<br>Pain<br>Excitement/anxiety<br>Fever<br>Hyperthyroidism<br>Medication:<br>Sympathomimetics, e.g. salbutamol<br>Vasodilators | Atrial fibrillation<br>Atrial flutter<br>Supraventricular tachycardia<br>Ventricular tachycardia |
| Slow rate (bradycardia, <60 bpm) | Sleep<br>Athletic training<br>Hypothyroidism<br>Medication:<br>Beta-blockers<br>Digoxin<br>Verapamil, diltiazem | Carotid sinus hypersensitivity<br>Sick sinus syndrome<br>Second-degree heart block<br>Complete heart block |
| Irregular pulse | Sinus arrhythmia<br>Atrial extrasystoles<br>Ventricular extrasystoles | Atrial fibrillation<br>Atrial flutter with variable response<br>Second-degree heart block with variable response |

## 4.10 Haemodynamic effects of respiration

| | Inspiration | Expiration |
|---|---|---|
| Pulse/heart rate | Accelerates | Slows |
| Systolic blood pressure | Falls (up to 10 mmHg) | Rises |
| Jugular venous pressure | Falls | Rises |
| Second heart sound | Splits | Fuses |

## 4.11 Common causes of atrial fibrillation

- Hypertension
- Heart failure
- Myocardial infarction
- Thyrotoxicosis
- Alcohol-related heart disease
- Mitral valve disease
- Infection, e.g. respiratory, urinary
- Following surgery, especially cardiothoracic surgery

## 4.12 Causes of increased pulse volume

### Physiological

- Exercise
- Pregnancy
- Advanced age
- Increased environmental temperature

### Pathological

- Hypertension
- Fever
- Thyrotoxicosis
- Anaemia
- Aortic regurgitation
- Paget's disease of bone
- Peripheral atrioventricular shunt

## 4.13 British Hypertension Society classification of blood pressure (BP) levels

| BP | Systolic BP (mmHg) | Diastolic BP (mmHg) |
|---|---|---|
| Optimal | <120 | <80 |
| Normal | <130 | <85 |
| High normal | 130–139 | 85–89 |
| **Hypertension** | | |
| Grade 1 (mild) | 140–159 | 90–99 |
| Grade 2 (moderate) | 160–179 | 100–109 |
| Grade 3 (severe) | >180 | >110 |
| **Isolated systolic hypertension** | | |
| Grade 1 | 140–159 | <90 |
| Grade 2 | >160 | <90 |

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## 4.14 Clinical clues to secondary hypertension

| Clinical feature | Cause |
|---|---|
| Widespread vascular disease<br>Renal bruit | Renovascular disease, including renal artery stenosis |
| Episodes of sweating, headache and palpitation | Phaeochromocytoma |
| Hypokalaemia | Primary aldosteronism |
| Cushingoid facies, central obesity, abdominal striae, proximal muscle weakness<br>Chronic glucocorticoid use | Cushing's syndrome |
| Low-volume femoral pulses with radiofemoral delay | Coarctation of the aorta |
| Bilateral palpable kidneys | Adult polycystic kidney disease (p. 243) |

## 4.15 Differences between carotid artery and jugular venous pulsation

| Carotid | Jugular |
|---|---|
| Rapid outward movement | Rapid inward movement |
| One peak per heart beat | Two peaks per heart beat (in sinus rhythm) |
| Palpable | Impalpable |
| Pulsation unaffected by pressure at the root of the neck | Pulsation diminished by pressure at the root of the neck |
| Independent of respiration | Height of pulsation varies with respiration |
| Independent of the position of the patient | Varies with the position of the patient |
| Independent of abdominal pressure | Rises with abdominal pressure |

## 4.16 Abnormalities of the jugular venous pulse

| Condition | Abnormalities |
|---|---|
| Heart failure | Elevation, sustained abdominojugular reflux >10 seconds |
| Pulmonary embolism, tamponade | Elevation |
| Pericardial effusion | Elevation, ~~prominent~~ flattened 'y' descent |
| Pericardial constriction | Elevation, Kussmaul's sign, prominent 'y' descent 'x' descent |
| Superior vena cava obstruction | Elevation, loss of pulsation |
| Atrial fibrillation | Absent 'a' waves |
| Tricuspid stenosis | ~~Giant~~ 'a' waves Large, prominent |
| Tricuspid regurgitation | Giant 'v' or 'cv' waves |
| Complete heart block | 'Cannon' waves |

## 4.17 Cardiac auscultation: the best sites for hearing an abnormality

| Site | Sound |
|---|---|
| Cardiac apex<br>• Midsystolic of M prolapse<br>• Pansystolic of MR<br>• Opening snap of MS | First heart sound<br>Third and fourth heart sounds<br>Mid-diastolic murmur of mitral stenosis |
| Lower left sternal border<br>Apex ← | Early diastolic murmurs of aortic and tricuspid regurgitation<br>~~Opening snap of mitral stenosis~~<br>Pansystolic murmur of ventricular septal defect |
| Upper left sternal border $S_2$ splitting | Second heart sound<br>Pulmonary valve murmurs |
| Upper right sternal border | Systolic ejection (outflow) murmurs, e.g. aortic stenosis, hypertrophic cardiomyopathy |
| Left axilla | Radiation of the pansystolic murmur of mitral regurgitation |
| Below left clavicle | Continuous 'machinery' murmur of a persistent patent ductus arteriosus |

tricuspid → pansystolic

# 4.18 Abnormalities of intensity of the first heart sound

## Quiet

- Low cardiac output
- Poor left ventricular function
- Rheumatic mitral regurgitation
- Long P–R interval (first-degree heart block)

## Loud

- Increased cardiac output
- Large stroke volume
- Mitral stenosis
- Short P–R interval
- Atrial myxoma (rare)

## Variable

- Atrial fibrillation
- Extrasystoles
- Complete heart block

## 4.19 Abnormalities of the second heart sound

### Quiet

- Low cardiac output
- Calcific aortic stenosis
- Aortic regurgitation

### Loud

- Systemic hypertension (aortic component)
- Pulmonary hypertension (pulmonary component)

### Split

**Widens in inspiration (enhanced physiological splitting)**

- Right bundle branch block
- Pulmonary stenosis
- Pulmonary hypertension
- Ventricular septal defect

**Fixed splitting (unaffected by respiration)**

- Atrial septal defect

**Widens in expiration (reversed splitting)**

- Aortic stenosis
- Hypertrophic cardiomyopathy
- Left bundle branch block
- Ventricular pacing

## 4.20 Grades of intensity of murmur

| Grade | Description |
|---|---|
| 1 | Heard by an expert in optimum conditions |
| 2 | Heard by a non-expert in optimum conditions |
| 3 | Easily heard; no thrill |
| 4 | A loud murmur, with a thrill |
| 5 | Very loud, often heard over a wide area, with thrill |
| 6 | Extremely loud, heard without a stethoscope |

## 4.21 Causes of systolic murmurs

### Ejection systolic murmurs

- Increased flow through normal valves:
  - Severe anaemia, fever, athletes (bradycardia → large stroke volume), pregnancy
  - Atrial septal defect (pulmonary flow murmur)
  - Other causes of flow murmurs (increased stroke volume in aortic regurgitation)
- Normal or reduced flow though a stenotic valve:
  - Aortic stenosis
  - Pulmonary stenosis
- Subvalvular obstruction:
  - Hypertrophic obstructive cardiomyopathy

### Pansystolic murmurs

- Mitral regurgitation
- Tricuspid regurgitation
- Ventricular septal defect
- Leaking mitral or tricuspid prosthesis

### Late systolic murmurs

- Mitral valve prolapse

## 4.23 The clinical features of arterial, neurogenic and venous claudication

| | Arterial | Neurogenic | Venous |
|---|---|---|---|
| Pathology | Stenosis or occlusion of major lower limb arteries | Lumbar nerve root or cauda equina compression (spinal stenosis) | Obstruction to the venous outflow of the leg due to iliofemoral venous occlusion |
| Site of pain | Muscles, usually the calf but may involve thigh and buttocks | Ill-defined<br>Whole leg<br>May be associated with numbness and tingling | Whole leg<br>'Bursting' in nature |
| Laterality | Unilateral or bilateral | Often bilateral | Nearly always unilateral |
| Onset | Gradual after walking the 'claudication distance' | Often immediate on walking or standing up | Gradual, from the moment walking starts |
| Relieving features | On stopping walking, the pain disappears completely in 1–2 minutes | Bending forwards and stopping walking<br>Patient may sit down for full relief | Leg elevation |
| Colour | Normal or pale | Normal | Cyanosed<br>Often visible varicose veins |
| Temperature | Normal or cool | Normal | Normal or increased |
| Oedema | Absent | Absent | Always present |
| Pulses | Reduced or absent | Normal | Present but may be difficult to feel owing to oedema |
| Straight-leg raising | Normal | May be limited | Normal |

## 4.22 Fontaine classification of lower limb ischaemia

| Stage | Description |
|---|---|
| I | Asymptomatic |
| II | Intermittent claudication |
| III | Night/rest pain |
| IV | Tissue loss (ulceration/gangrene) |

## 4.24 Signs of acute limb ischaemia

- Pallor
- Pulselessness
- Perishing cold
- Paraesthesia
- Pain (worse when muscle squeezed)
- Paralysis

## 4.25 Acute limb ischaemia: embolus versus thrombosis in situ

| | Embolus | Thrombosis |
|---|---|---|
| Onset and severity | Acute (seconds or minutes), ischaemia profound (no pre-existing collaterals) | Insidious (hours or days), ischaemia less severe (pre-existing collaterals) |
| Embolic source | Present | Absent |
| Previous claudication | Absent | Present |
| Pulses in contralateral leg | Present | Often absent, reflecting widespread peripheral arterial disease |
| Diagnosis | Clinical | Angiography |
| Treatment | Embolectomy and anticoagulation | Medical, bypass surgery, catheter-directed thrombolysis |

## 4.26 Signs suggesting vascular disease

| Sign | Implication |
|---|---|
| **Hands and arms** | |
| Tobacco stains | Smoking |
| Purple discoloration of the fingertips | Atheroembolism from a proximal subclavian aneurysm |
| Pits and healed scars in the finger pulps | Secondary Raynaud's syndrome |
| Calcinosis and visible nail-fold capillary loops | Systemic sclerosis and CREST (calcinosis, Raynaud's phenomenon, oesophageal dysfunction, sclerodactyly, telangiectasia) |
| Wasting of the small muscles of the hand | Thoracic outlet syndrome |
| **Face and neck** | |
| Corneal arcus and xanthelasma | Hypercholesterolaemia |
| Horner's syndrome | Carotid artery dissection or aneurysm |
| Hoarseness of the voice and 'bovine' cough | Recurrent laryngeal nerve palsy from a thoracic aortic aneurysm |
| Prominent veins in the neck, shoulder and anterior chest | Axillary/subclavian vein occlusion |
| **Abdomen** | |
| Epigastric/umbilical pulsation | Aortoiliac aneurysm |
| Mottling of the abdomen | Ruptured abdominal aortic aneurysm or saddle embolism occluding aortic bifurcation |
| Evidence of weight loss | Visceral ischaemia |

## 4.28 Clinical features of venous and arterial ulceration

| Clinical feature | Venous ulceration | Arterial ulceration | Neuropathic ulceration |
|---|---|---|---|
| Sex | More common in women | More common in men | Equal in men and women |
| Risk factors | Thrombophilia, family history, previous deep vein thrombosis, varicose veins | Known peripheral vascular disease or risk factors for atherosclerotic disease, e.g. smoking, diabetes, dyslipidaemia, hypertension | Diabetes or other peripheral neuropathy (loss of sensation, loss of intrinsic foot muscle function, autonomic dysregulation) |
| Pain | Often painless but some patients have some pain that improves with elevating the leg | Severe pain, except in diabetics with neuropathy; improves on dependency | Painless or neuropathic pain |
| Site | Gaiter areas; 80% medial (long saphenous vein), 20% lateral (short saphenous vein) | Pressure areas (malleoli, heel, fifth metatarsal base, metatarsal heads and toes) | Pressure areas, sole of foot, tips of toes |
| Appearance | Shallow, irregular margin<br>Slough on granulating base | Regular, 'punched out'<br>Sloughy or necrotic base | Macerated, moist white skin surrounded by callus, often on load-bearing aspects (motor neuropathy) |
| Surrounding skin | Lipodermatosclerosis always present<br>Oedema | Shiny, hairless, trophic changes | Dry due to reduced sweating (autonomic neuropathy) |
| Veins | Full and usually varicose | Empty with 'guttering' on elevation | Normal |
| Temperature | Warm<br>Palpable pulses | Cold<br>Absent pulses | Warm or cold due to autonomic neuropathy<br>Palpable pulses |

## 6.42 Features of deep vein thrombosis of the lower limb

| Clinical feature | Non-occlusive thrombus | Occlusive thrombus |
|---|---|---|
| Pain | Often absent | Usually present |
| Calf tenderness | Often absent | Usually present |
| Swelling | Absent | Present |
| Temperature | Normal or slightly increased | Increased |
| Superficial veins | Normal | Distended |
| Pulmonary embolism | High risk | Low risk |

## 4.29 Risk factors for deep vein thrombosis

- Obesity
- Smoking
- Recent bed rest or operations (especially to the leg, pelvis or abdomen)
- Recent travel, especially long flights
- Previous trauma to the leg, especially long-bone fractures, plaster of Paris splintage and immobilisation
- Pregnancy or features suggesting pelvic disease
- Malignant disease
- Previous deep vein thrombosis
- Family history of thrombosis
- Inherited thrombophilia, e.g. factor V Leiden
- Recent central venous catheterisation, injection of drug
- Use of oral contraceptive or hormone replacement therapy

## 6.38 Diseases associated with secondary Raynaud's syndrome

- Connective tissue syndromes, e.g. systemic sclerosis, CREST (calcinosis, Raynaud's phenomenon, oesophageal dysfunction, sclerodactyly, telangiectasia) and systemic lupus erythematosus
- Atherosclerosis/embolism from proximal source, e.g. subclavian artery aneurysm
- Drug-related, e.g. nicotine, beta-blockers, ergot
- Thoracic outlet syndrome
- Malignancy
- Hyperviscosity syndromes, e.g. Waldenström's macroglobulinaemia, polycythaemia
- Vibration-induced disorders (power tools)
- Cold agglutinin disorders

## 6.41 Clinical features of venous and arterial ulceration

| Clinical feature | Venous ulceration | Arterial ulceration |
|---|---|---|
| Age | Develops at age 40–45 but may not present for years; multiple recurrences common | First presents in over-60s |
| Sex | More common in women | More common in men |
| Past medical history | Deep vein thrombosis (DVT) or suggestive of occult DVT, i.e. leg swelling after childbirth, hip/knee replacement or long bone fracture | Peripheral arterial disease, cardio- and cerebrovascular disease |
| Risk factors | Thrombophilia, family history, previous DVT | Smoking, diabetes, hypercholesterolaemia and hypertension |
| Pain | One-third have pain (not usually severe) that improves with elevating the leg | Severe pain, except in diabetics with neuropathy; improves on dependency |
| Site | Gaiter areas; usually medial to long saphenous vein; 20% are lateral to short saphenous vein | Pressure areas (malleoli, heel, fifth metatarsal base, metatarsal heads and toes) |
| Margin | Irregular, often with neoepithelium (appears whiter than mature skin) | Regular, indolent, 'punched out' |
| Base | Often pink and granulating under green slough | Sloughy (green) or necrotic (black), with no granulation |
| Surrounding skin | Lipodermatosclerosis always present | No venous skin changes |
| Veins | Full and usually varicose | Empty with 'guttering' on elevation |
| Swelling (oedema) | Usually present | Absent |
| Temperature | Warm | Cold |
| Pulses | Present, but may be difficult to feel | Absent |