Cardiac auscultation skills

- Medical students and residents generally have poor skills (20% accuracy)
- Phonocardiography no longer funded by insurance companies in USA (since late 70’s)
- Use of echocardiography (since early 80’s)
- Demise of bedside examination skills for physician certification (USA)
Proficiency in auscultation
Dr Aubrey Leatham’s phonocardiograph

Fig. 1.5 High definition phonocardiograph. The difficulties of obtaining a suitable commercial recorder were illustrated by the need to construct this recorder consisting of two Cambridge string and two mirror galvanometers. Most of the recordings illustrating this book were made with this instrument but it is now housed in the Wellcome Museum.
In asymptomatic adults -

1. Are systolic murmurs in asymptomatic adults important?
2. If not, are there exceptions?
3. When is referral necessary?
4. Is echocardiography usually appropriate?
5. Are prophylactic antibiotics required for dental procedures?
Innocent murmurs in adults

- Not uncommon
- Usually younger adults
- Usually Grade 1-2 /6
- Low-medium pitched
- Relatively short
- Mid systolic, ends before late systole
- Heard at base but can radiate
National Guidelines for systolic murmurs in asymptomatic patients - 2004

Grade 1-2/6
Listen again > 1 month later
ECG
CXR
Reassure if normal

Grade 3-6/6
Refer

Pan- or late systolic
Refer

www.electiveservices.govt.nz
345 asymptomatic patients

Intensity of murmur

Grade 0 - 4

0 0-1 1 [1 to 2] 2 [2 to 3] 3 4

Includes EDM - 2 patients

≥ 3/6 intensity
ANTIBIOTIC PROPHYLAXIS
FOR (invasive) DENTAL PROCEDURES

BSAC guidelines 2006
- previous IE
- prosthetic valves
- surgically constructed shunts/conduits

ACC/AHA guidelines 2008
- prosthetic valves (or prosthetic material for valve repair)
- congenital heart disease (qualifications)
- HTX with valve regurgitation 2º structurally abnormal valve

NICE guidelines 2008
not recommended (but accept that certain groups at increased risk – e.g. acquired valve disease, prosthetic valves, CHD, previous IE, HCM)

NHF/CSANZ NZ guidelines 2008
- prosthetic valves
- rheumatic valve disease
- previous IE
- unrepaired cyanotic CHD
- surgical or catheter repair of CHD (within 6/12)
Antibiotic prophylaxis for dental procedures
NHF / CSANZ Guidelines 2008

- Prosthetic valves
- Rheumatic valve disease
- Previous IE
- Unrepaired cyanotic CHD
- Surgical or catheter repair of CHD (within 6/12)
Murmurs of lesions that can be confused with innocent murmurs

- ASD (~0.1%)
- Hypertrophic cardiomyopathy (~0.1%)
- Bicuspid aortic valve (1 - 2%, M>F)
- Aortic sclerosis (25% > 65yrs)
- Mild AS (>1% after age 65)
- Murmur of moderate or severe AS can be softer than expected (with low stroke volume, etc)
345 asymptomatic patients referred with murmur

- No murmur heard 20%
- Innocent or assumed trivial 47%
- Aortic sclerosis 14%
- Significant lesion 20%
Significant lesions

- Mitral regurgitation (6%)  4 moderate or severe
- Aortic stenosis  (6%)  ~ 5 moderate or severe
- ASD, VSD, miscellaneous (8%)
  - almost no patients required antibiotics for dental prophylaxis, according to guidelines
Heart Murmurs
Sights and Sounds

Ivor Gerber
Arthur Coverdale
Assessment of a murmur

Auscultation

Imaging
Auscultation
When in Rome........
Assessment of a systolic murmur

Auscultation

- Grade 1/6
- Grade 2/6
- Grade 3/6
- Grade 4/6
- Grade 5/6
- Grade 6/6
Referral

• “Please review Mr R, a pleasant man who is a restaurateur, aged 66, who presented with an asymptomatic soft systolic murmur at the left sternal edge detected on routine examination. Mr R was concerned about the murmur and requested an assessment.”
Symptoms
ECG

- Should this be routine?
- What if normal?
- How abnormal is abnormal
  - axis, LVH, RVE, LAE, RAE
- Who interprets – GP, computer, friendly cardiologist
Bicuspid aortic valve
Murmurs

- **Systolic murmurs:**
  - Physiologic
  - Mitral regurgitation
  - Tricuspid regurgitation
  - Aortic stenosis
  - Pulmonary stenosis
  - Ventricular septal defect
  - Atrial septal defect

- **Diastolic murmurs**
  - Aortic regurgitation
  - Pulmonary regurgitation
  - Mitral stenosis

- **Other**
  - Patent ductus arteriosus
  - Pericardial rub
  - Extra heart sounds
  - Split heart sounds