# Innocent Murmurs

Diagnosis is by exclusion of organic cardiac lesions.

## Understanding how murmurs come to be

If you understand some basic pathophysiology you won’t be confused by some confusing terminology that is used widely and loosely. All murmurs are “flow murmurs” and are “physiological” in some way or another!

<table>
<thead>
<tr>
<th>Anatomy:</th>
<th>Blood Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Abnormal (Increased)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Normal</th>
<th>“Innocent”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever, Anaemia, Hyperthyroidism etc (“functional”)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Abnormal</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-artication, Incompetence, VSD, HOCM, etc</td>
<td></td>
</tr>
</tbody>
</table>

### Blood Flow

<table>
<thead>
<tr>
<th>Normal</th>
<th>Abnormal (Increased)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever, Anaemia, Hyperthyroidism etc (“functional”)</td>
<td></td>
</tr>
</tbody>
</table>

## Innocent Murmurs

1) **Characteristics**

1) short - except a venous hum, which is continuous
2) usually systolic
3) grade III or softer
4) altered by change in position
5) often “musical”

2) **Normal physical examination, especially:**

- cardiac impulse
- femoral pulses
- 2nd heart sound not loud, splits normally

### Types of Innocent Murmurs

1) **Stills murmur**

- Midsystolic. Maximum intensity mid to lower left sternal border. Radiates to the apex and base. Musical. Differentiate this from a small VSD

2) **Pulmonary flow murmur**

- Early to midsystolic. Upper left sternal edge.
- Neonates (specially prems) often have a soft ejection murmur at the base, radiating to axillae and back. Disappears before 1 yr of age.

3) **Investigations**

- Chest X-ray - of little use in a probable innocent murmur with no other physical signs
- ECG - in basal murmurs to exclude ASD (RSR’ pattern).

4) **Management**

- exclude anaemia
- reassurance
- if in doubt, follow-up:
  - age > 3 months: in 1 yr
  - age < 3 months: in 1 month

3) **Carotid Bruit**

- Midsystolic. Best heard in the neck just above the clavicles. Differentiate from aortic stenosis which is loudest below clavicle.

4) **Venous hum**

- Continuous, with diastolic component often louder than systolic. Maximal just below clavical. Best heard with patient sitting or standing. Disappears if neck is turned or compressed.

5) **Apical murmur**


### What to do if you think the murmur is innocent

Get a second opinion from a colleague, and if there is any doubt refer to a Paediatrician/Paediatric Cardiologist

Make sure there are no haemodynamic abnormalities:

1) Heart failure
2) Pulmonary hypertension
3) Cyanosis (use a pulse oximeter if you are not sure)

If any of these are present then the murmur is NOT innocent, and the child must be referred!