



Mechanical and tissue valves for aortic valve replacement



Mechanical valves

Mechanical valves are very reliable. There are various models made by different companies but essentially they're very similar. They're made from carbon and metal.

Mechanical valves will last your lifetime but your normal blood will want to clot (build up and stick) on the valve. Therefore, if you choose to have a mechanical valve, you'll need to take an anticoagulant medicine called warfarin everyday of your life to keep your blood thin.

Taking warfarin means you'll need to have blood tests every week, or more frequently. These can be done at your GP surgery, anticoagulation clinic or at home if you purchase a home testing kit. If you have to have another operation such as a hip replacement, you would need to stop the warfarin and change to heparin at the time of the procedure. This is because warfarin can cause bleeding problems such as stomach ulcers and nose bleeds.

Mechanical valves make a slight clicking noise - like an electric clock in a quiet room. You'll almost certainly not notice it, but family and friends might hear it in a quiet situation. If you do notice it, it can be a bit disconcerting, but it's nothing to worry about.

Mechanical valves tend to be the preferred choice of:

- younger people (younger than 65) as this will lessen the chance of needing another valve operation because the valve will last for a lifetime
- people who are at risk of a replacement tissue valve deteriorating quickly
- people who are already taking anticoagulation medicines for other reasons
- people who would be at risk if another valve operation were needed

Mechanical valves have the same risk of infection as tissue valves.

Tissue valves

Tissue valves are also very reliable. They are either made from the valve of a pig (porcine valve) or created from the sac encasing a calf's heart (bovine pericardium). These valves perform well and out of every 100 implants, 80 will last at least 15 years. This means that 20 out of 100 implants will begin to fail in that time.

If this happens to you, you'll need a further procedure. This will either be another aortic valve replacement or possibly a TAVI procedure if your tissue valve is big enough to allow a TAVI valve to be inserted inside it.

The big difference between mechanical and tissue valves is that with tissue valves, you don't need to take a blood-thinning medicine (warfarin) for the rest of your life. However, a tissue valve won't last as long as a mechanical valve.

Tissue valves tend to be the preferred choice of:

- older people (older than 70) as they may not need another valve operation in their lifetime
- people who have a risk of bleeding and don't want to take warfarin
- people who have other major surgery planned and don't want to have blood-thinning drugs
- people who are planning to have children and avoid the risk of warfarin in pregnancy

Tissue valves have the same risk of infection as mechanical valves.