

# Percutaneous coronary interventions (PCI)

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## Revascularisation

Coronary artery revascularisation can be done by non-surgical percutaneous coronary intervention (PCI) or by surgical coronary artery bypass grafting (CABG). PCI is performed via a cardiac catheter through a small perforation of the femoral artery with the aim of opening the vessels by stenting or angioplasty.

Stents mechanically open the artery, while angioplasty involves inserting a balloon into the narrowed area of the coronary artery before expanding it, pushing the plaque to the sides of the artery and restoring the normal size.

## Valve procedures

Percutaneous valve replacements delivered via a catheter are most commonly performed for aortic valves but can also be done on the pulmonary and mitral valves.

## Aortic valve

Transcatheter aortic valve implantation (TAVI) is for patients with aortic valve stenosis who are unsuitable for open heart surgery.

A TAVI can be performed with several different access methods: transfemoral, transapical (through an anterolateral mini-thoracotomy), subclavian or transaortic (through a minimally invasive surgical incision into the aorta). The transfemoral approach is the preferred option; however one of the other approaches will be used in patients with heavily diseased iliofemoral systems or aortic disease preventing transfemoral implantation such as peripheral vascular disease, calcification or stenosis.

## Pulmonary valve

Transcatheter pulmonary valve replacement can be used in selected patients with pulmonary regurgitation and right ventricular outflow tract obstruction. Access is achieved via the right femoral vein or the jugular vein (if the femoral vessels are occluded).

## Mitral valve

Mitral valve repair for regurgitation can be achieved with the percutaneous implantation (through the femoral artery) of a clip that grabs and approximates the edges of the mitral leaflets. This creates a double orifice valve and reduces mitral regurgitation for high risk patients unable to tolerate open heart surgery.

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### References

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