

# **Dual-chamber pacemakers for treating symptomatic bradycardia due to sick sinus syndrome without atrioventricular block: a systematic review and economic evaluation**

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## **Plain English summary**

### **Dual-chamber pacemakers for treating symptomatic bradycardia**

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## Plain English summary

**B**radycardia means that the heart rate is unusually slow, beating at fewer than 60 beats per minute. People with bradycardia may have trouble exercising, have irregular or pounding heart beats or may even faint. Bradycardia can be caused by diseases that stop the heart's natural pacemaker working properly, called sick sinus syndrome (SSS) and atrioventricular (AV) block. The only effective treatment for people with bradycardia is having an operation to fit an artificial pacemaker.

Artificial pacemakers are connected to one or two chambers of the heart. After implantation, it might eventually be necessary to have a second operation to change the pacemaker's battery or replace the pacemaker. The risk of complications of surgery is higher with second surgery than with initial implantation.

The aim of this project was to look at the benefits and harms of dual-chamber pacemakers compared with single-chamber pacemakers for people with bradycardia caused by SSS but without AV block. This project also looks at whether or not these pacemakers are likely to be considered good value for money for the NHS.

Based on the best available evidence, it is likely that people with a dual-chamber pacemaker need fewer reoperations and have fewer unusual heart beats than people with single-chamber pacemaker. There may also be an important difference in how people's hearts worsen at pumping blood around the body at the right pressure, which seems to vary with age and pacemaker type. The economic evaluation shows that dual-chamber pacemakers are more expensive and more effective than single-chamber atrial pacemakers.

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