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## Repairing heart muscle with back muscle

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Many patients are on waiting lists for heart transplants.

For various reasons their own hearts are not working properly and their lives are now threatened.

A new technique is being developed that involves making a new heart from the patient's own back muscle.

A research team of doctors and medical scientists from the University of Birmingham have been investigating this for several years now.

If successful, this new method would avoid the problems of **tissue rejection** and all the difficulties of matching a donor with the recipient.

Dr Salmons of the research team believes that this new technique would revolutionise heart operations.

'Patients will no longer have to cope with the possibility of organ rejection as the new organ will not be made from **alien tissue**.' He continued, 'Surgeons have wanted to do this for a long time but were faced with the problem that back muscle suffers from **fatigue** (gets tired easily) in a way that normal heart muscle does not. We have now found a way of making back muscle fatigue-resistant by giving small electric shocks.'

The procedure involves making a new heart from the patient's own back muscles. The new organ would be stimulated by tiny batteries and installed next to the original heart, so that both would be beating side by side.

### Questions

1 Suggest a reason why heart patients would benefit from this type of tissue replacement.

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2 Three words or phrases are printed in bold. Explain what these mean:

a **tissue rejection**: \_\_\_\_\_

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b **alien tissue**: \_\_\_\_\_

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c **fatigue**: \_\_\_\_\_

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3 Explain why it is a good idea to use parts of a patient's body in such operations rather than transplanting someone else's tissue.

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4 Which muscles are used to make the new heart?

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5 Why were surgeons not able to use back muscle originally?

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6 a What do scientists do to back muscle to make it usable as heart tissue?

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b How is the new heart kept working?

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