

# Identifying back pain subgroups: developing and applying approaches using individual patient data collected within clinical trials

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## Plain English summary

### Identifying back pain subgroups

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## Plain English summary

Low back pain is a common and costly disorder for both the patient and the health service, which can be managed using different treatment approaches, some of which are delivered in a physiotherapy department. The benefits of treatments delivered by therapists are small, on average, that is, they get small improvements. If we could predict which patients would be most likely to benefit from different treatments it would be possible to improve the overall effectiveness of treatments and potentially make better use of NHS resources. To address this we pooled together data from 19 back pain trials from around the world. This provided us with a data set of 9328 patients. We developed novel statistical methods to identify subpopulations (groups of people with similar characteristics) that would be likely to benefit from certain treatments. Of the three methods developed, two allowed us to identify subpopulations. The additional benefits for individuals in the subpopulations were modest and unlikely to be of clinical importance. Our third method was exploratory and allowed us to identify the chance of a particular treatment choice being effective for a particular patient.

Overall, we did not find any subpopulations that would benefit from treatment. Neither did we find that such an approach to identifying patients would be cost-effective. We have developed new ways of identifying subpopulations and would recommend the application of these methods to other clinical conditions. We have also developed, from prior trials, a data pool that will now become a resource for back pain researchers to help them answer other questions in the field.



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