

Probiotics to reduce antibiotic administration in care home residents aged 65 years and older: the PRINCESS RCT

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Declared competing interests of authors: Christopher C Butler was a National Institute for Health Research (NIHR) Efficacy and Mechanism Evaluation board member from 2011 to 2016. Kerenza Hood is a member of the NIHR Health Technology Assessment (HTA) General Committee (2016 to present) and HTA Funding Committee Policy Group (2018 to present) and was a member of the Clinical Trials Unit Standing Advisory Committee until the end of 2018. David Gillespie is an associate member of the NIHR HTA General Committee (2019 to present). Nick A Francis is a member of the NIHR HTA General Committee (2019 to present). Philip C Calder reports personal fees and non-financial support from Chr. Hansen A/S (Hørsholm, Denmark) outside the submitted work. Paul Little was Programme Director of Programme Grants for Applied Research (PGfAR), Editor-in-Chief of the PGfAR journal and a member of NIHR Journals Library Board from 2012 to 2018.

Published April 2021

DOI: 10.3310/eme08070

Plain English summary

The PRINCESS RCT

Efficacy and Mechanism Evaluation 2021; Vol. 8: No. 7

DOI: 10.3310/eme08070

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Plain English summary

Probiotics are bacteria that, when taken, provide health benefits. Probiotics have been shown to reduce the risk of infections and antibiotic use in children, but not in older frail people. Care home residents are prone to infection and so are often prescribed antibiotics. Using antibiotics too often increases the risk of infection with bacteria that are resistant to antibiotics, making infections more dangerous and harder to treat. Probiotics are cheap and safe, and may reduce the need for antibiotics by preventing infections in this vulnerable group. However, to our knowledge, there have been no rigorous randomised controlled trials of the use of probiotics to reduce antibiotic use in care home residents by preventing infections.

We tested whether or not a combination of two probiotic bacteria, taken each day for up to 1 year, reduced the number of days on which care home residents took antibiotics. A total of 310 care home residents from 23 care homes in the UK were allocated, by chance, to take either a daily capsule containing an oral probiotic combination of *Lactobacillus rhamnosus* GG and *Bifidobacterium animalis* subsp. *lactis* BB-12 or a capsule that looked the same but that did not contain probiotic bacteria. Nurses, who did not know whether the resident was receiving the probiotic combination or a dummy capsule, visited the care home residents each week to collect relevant information.

We did not find that the daily probiotic combination significantly reduced the number of days on which the care home residents took antibiotics. Furthermore, we did not find that the probiotics significantly reduced the number of infections or how long infections lasted, diarrhoea from being on antibiotics, hospitalisations or antibiotic-resistant bacteria in patients' stools, and the probiotics did not improve care home residents' quality of life or immunity. Therefore, care home residents may not benefit from taking this probiotic combination each day to reduce antibiotic use and prevent infections.

Efficacy and Mechanism Evaluation

ISSN 2050-4365 (Print)

ISSN 2050-4373 (Online)

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Editorial contact: journals.library@nihr.ac.uk

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The EME programme is funded by the Medical Research Council (MRC) and the National Institute for Health Research (NIHR), with contributions from the Chief Scientist Office (CSO) in Scotland and National Institute for Social Care and Health Research (NISCHR) in Wales and the Health and Social Care Research and Development (HSC R&D), Public Health Agency in Northern Ireland.

This report

The research reported in this issue of the journal was funded by the EME programme as project number 13/95/10. The contractual start date was in September 2015. The final report began editorial review in November 2019 and was accepted for publication in June 2020. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The EME editors and production house have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the final report document. However, they do not accept liability for damages or losses arising from material published in this report.

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