

# Only half of patients take their medications as prescribed

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Various pills. Credit: Wikipedia

The cost of patients not taking their medications as prescribed can be substantial in terms of their health. Although a large amount of research evidence has tried to address this problem, there are no well-established approaches to help them, according to a new systematic review published in the *Cochrane Library*. The authors of the review examined data from 182 trials testing different approaches to increasing medication adherence and patient health. Even though the review included a significant number of the best studies to date, in most cases, trials had important problems in design, which made it hard to determine which approaches actually worked.

Only about half of all patients who are prescribed medication that they

must administer themselves actually take their medication as prescribed. Many stop taking medication all together and others do not follow the instructions for taking it properly. This has been the case in many different diseases for at least the last half a century. In conditions where effective drug treatments are available, patients who take their medications as per their provider's instructions can see a real difference to their health. However, when researchers in the field have tried to draw together evidence on this, they have found it unreliable and inconsistent.

The researchers looked at data from 182 trials, having added 109 recent trials that were published after the previous version of this *Cochrane systematic review* from 2007. The trials studied a wide range of [medical](#) conditions, from HIV to psychiatric disorders, and trialled many different interventions for increasing adherence to medication. They revealed wide-ranging effects on adherence and patient health, which were measured using a large variety of methods. Therefore, it was very difficult for the researchers to come to firm conclusions about whether any of the interventions worked well.

"The studies varied so much in terms of their design and their results that it would have been misleading to try to come up with general conclusions," said lead researcher, Robby Nieuwlaat of the Department of Clinical Epidemiology and Biostatistics at McMaster University, in Hamilton, Canada. "Based on this evidence, it is uncertain how adherence to medication can be consistently improved. We need to see larger and higher quality trials, which better take in account individual patient's problems with adherence."

Most trials were unreliable casting doubt on the validity of the results instead. Out of 182 trials, only 17 were of high quality and each of these tested combinations of several different approaches, such as support from family members or pharmacists, education and counselling. Still fewer, only 5 of these 17, showed improvements in health outcomes for

patients, as well as in [medication adherence](#).

"This review addresses one of the biggest challenges in healthcare" added Dr David Tovey, Editor in Chief of the *Cochrane Library* "it's a real surprise that the vast amount of research that has been done has not moved us further forward in our understanding of how to address this problem. With the costs of healthcare across the world increasing, we've never needed evidence to answer this question more than we do now."

The authors have now decided to turn to the research community to help understand the issues. They have created a database of the relevant trials and made this available to other researchers in the field in order to encourage collaboration and more in-depth analyses on smaller groups of trials. "By making our comprehensive database available for sharing we hope to contribute to the design of better trials and interventions for medication adherence," said Nieuwlaat. "We need to avoid repeating the painful lessons of adherence research to date and begin with interventions that have shown some promise, or at least have not produced repeatedly negative results."

**More information:** Nieuwlaat R, Wilczynski N, Navarro T, Hobson N, Jeffery R, Keenanasseril A, Agoritsas T, Mistry N, Iorio A, Jack S, Sivaramalingam B, Iserman E, Mustafa RA, Jedraszewski D, Cotoi C, Haynes RB. Interventions for enhancing medication adherence.

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