

## Introduction

This pocket guide, developed by the International Transplant Nurses Society (ITNS), provides an overview of the interventions used to overcome the different medication-adherence barriers experienced by transplant recipients.

While in hospital immediately post-transplant, self-medication programmes educate transplant recipients about how to take medications and help prepare recipients to take control of their medication regimens when they are discharged.<sup>1,2</sup> However, when they leave hospital, many recipients find it difficult to remain adherent to their medication all the time. This pocket guide provides further assistance for the long-term care of transplant recipients by suggesting interventions to common barriers to medication taking.

## How to Use This Pocket Guide

The pocket guide table of interventions overleaf can be used as a quick reference guide in the clinic to support identification of possible solutions to adherence barriers identified by the Identifying Medication Adherence Barriers (IMAB) questionnaire.

The pocket guide lists the medication adherence barrier items from the IMAB questionnaire down the left-hand side, and potential interventions are listed along the top.

While the efficacy of many of the suggested interventions is supported by evidence (and colour-coded accordingly; see below), several studies focused on general categories and did not offer guidance on specific interventions or investigate how effective they were for transplant recipients experiencing specific barriers. Therefore, ITNS has made expert recommendations to translate the findings into specific interventions which could be suitable solutions to the medication-adherence barriers listed, and these are marked with a tick in the pocket guide.

## How are the interventions scored?

The literature on interventions to medication-adherence barriers was systematically reviewed by members of ITNS. Relevant papers were scored according to the author guidelines in *American Family Physician*.<sup>3</sup> The strength of the evidence for each intervention was then assessed in order to assign the appropriate recommendation based on the traffic-light colours (green, yellow, and red) described in the table below. Additional interventions that have not been studied are indicated in grey.

1. Russell CL, Conn VS, Jantarakupf P. Older adult medication compliance: integrated review of randomized controlled trials. *Am J Health Behav.* 2006; 30: 636-650.
2. Wright J, Emerson A, Stephens M, et al. Hospital inpatient self-administration of medicine programmes: a critical literature review. *Pharm World Sci.* 2006; 28: 140-151.
3. American Family Physician. Authors Guide. Available from: <http://www.aafp.org/online/en/home/publications/journals/afp/afpauthors.html>



Strength of Recommendation	Strength of Evidence
<p><b>Green Interventions—Recommended for Practice</b> Interventions for which efficacy has been demonstrated by strong evidence from rigorously designed studies.</p>	<ul style="list-style-type: none"> <li>• High-quality randomized controlled trials (RCTs) that consider all important outcomes.</li> <li>• Meta-analyses or quantitative systematic reviews using comprehensive search strategies.</li> </ul>
<p><b>Yellow Interventions—Likely to be Effective</b> Interventions for which the evidence is less well-established than for those listed as 'green.'</p>	<ul style="list-style-type: none"> <li>• Well-designed non-randomized clinical trials.</li> <li>• Non-quantitative systematic reviews with appropriate search strategies and well-substantiated conclusions.</li> <li>• Lower-quality RCTs, clinical cohort studies, and case-controlled studies with non-biased selection of study participants and consistent findings.</li> <li>• Other evidence, such as high-quality, historical, uncontrolled studies or well-designed epidemiological studies with compelling findings, are also included.</li> </ul>
<p><b>Red Interventions—No Proven Efficacy</b> Interventions for which the evidence suggests that they may not be efficacious when used alone. These interventions may be useful when used in conjunction with other interventions, but no studies have investigated this.</p>	<ul style="list-style-type: none"> <li>• As above.</li> </ul>
<p><b>Grey Interventions—Expert Consensus</b> Interventions for which there is currently no evidence but which are suggested based on clinical practice and expert opinion.</p>	<ul style="list-style-type: none"> <li>• Consensus or expert opinion.</li> </ul>

Barriers		Interventions																			
I find it hard to...		Reduce medication dosing frequency*	Medication calendars showing the days/times that medication should be taken	Review timing of medication intake—schedule to coincide with regular routines	Pillbox with alarm**	Alarms set on a watch, mobile phone, or computer	E-mail or text medication reminders	Regular prescription refill reminders (by mail)	Succinct written medication instructions (e.g., a detailed timetable of required doses and timing of medication)	Consider other packaging options (e.g., time-specific blister packs)	Teach recipients to self-monitor key parameters (e.g., blood pressure, temperature, and side effects)	Electronic monitoring feedback (when using electronic medication packaging)	Assessment of depression related to medication taking and appropriate treatment	Education explaining why medication should be taken	Review how to take medication with recipient or discuss dose adjustment, alternative medication, or alternative formulations of medication (if available) with prescriber	Involve family or friends who can give support to encourage medication adherence	Place medications where they are visible (out of reach of children)	Keep spare medications at work, at home, in the car, and in the pockets of clothing	Refer to social worker or charity funds for financial assistance or switch to medication that is cheaper*	Use a pillbox (without an alarm)	Take pills one by one or take them with meals or drinks***
1	Take my anti-rejection medications because I forget	✓	✓	✓	✓	✓	✓				✓	✓				✓	✓			✓	
2	Get refills on time, so I run out of my anti-rejection medications		✓			✓	✓	✓								✓				✓	
3	Take my anti-rejection medications several times a day	✓	✓	✓	✓	✓	✓					✓			✓	✓	✓	✓		✓	
4	Take my anti-rejection medications because I am unsure about how to take them								✓							✓					
5	Remove the anti-rejection medications from the packaging									✓					✓	✓					
6	Take so many anti-rejection medications at the same time														✓						✓
7	Take my anti-rejection medications because they taste bad													✓	✓						✓
8	Swallow my anti-rejection medications														✓						✓
9	Take my anti-rejection medications when others notice me taking them			✓												✓					
10	Take my anti-rejection medications when I am busy with other things			✓	✓	✓	✓									✓	✓	✓			
11	Take my anti-rejection medications on time as I sometimes fall asleep or oversleep			✓	✓	✓										✓	✓				
12	Take my anti-rejection medications when I feel too ill								✓		✓			✓							
13	Remember to bring my anti-rejection medications with me when I go out			✓												✓	✓	✓			
14	Remember to take my anti-rejection medications if nobody reminds me to take them				✓	✓	✓										✓				
15	Take my anti-rejection medications because I don't feel any benefit from them								✓		✓			✓							
16	Take my anti-rejection medications because I can not afford them														✓					✓	
17	Understand the instructions on the anti-rejection medication packages								✓					✓	✓						
18	Take my anti-rejection medications because I experience side effects										✓			✓	✓						
19	Remember whether I have already taken my anti-rejection medications		✓		✓	✓				✓						✓					✓
20	Take my anti-rejection medications because I don't understand why I need them								✓					✓							
21	Take my anti-rejection medications because the times when I need to take them are inconvenient	✓		✓	✓	✓	✓									✓					
22	Remember to take my anti-rejection medications during holidays or weekends				✓	✓	✓									✓	✓	✓			
23	Remember to take my anti-rejection medications when something interrupts my daily routine (e.g., visit, phone call)				✓	✓	✓									✓	✓	✓			
24	Stick to my daily routine of anti-rejection medication taking			✓	✓	✓	✓					✓				✓	✓	✓		✓	
25	Take my anti-rejection medications when I feel sad or depressed												✓								
26	Take my anti-rejection medications because I do not understand when to take them		✓		✓	✓			✓					✓		✓					✓
27	Take my anti-rejection medications when I feel good								✓		✓			✓							
28	Go away from home and plan the day because I have to take my anti-rejection medications			✓												✓		✓			

\* This intervention requires approval from the prescriber.

\*\* Pillboxes should not be used for all types of medication. Check the medication label carefully. A nurse or pharmacist could prepare the pillbox.

\*\*\* Check the medication label carefully as some liquids or foods should not be taken with some anti-rejection medications.

Interventions for which effectiveness has been demonstrated by strong evidence from rigorously designed studies, meta-analyses, or quantitative systematic reviews.
  Interventions for which the evidence is less established.
  Interventions that do not have proven efficacy; these should be used in conjunction with other interventions.
  Interventions for which there is currently no evidence but which are suggested based on clinical practice.
  Recommended intervention for a specific medication-adherence barrier.

