



Swallowing difficulties & liquid medicines

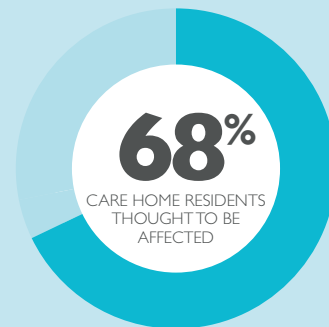
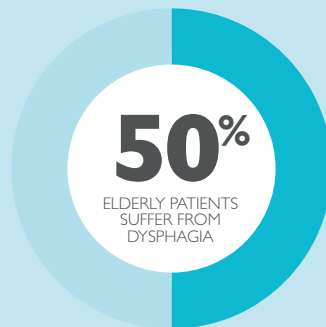


DYSPHAGIA - A COMMON PROBLEM

Dysphagia, or difficulty swallowing, affects many people in the UK including 50% of the elderly.¹ Up to 68% of care home residents are thought to be affected.² Dysphagia is prevalent or a key concern in:

- Stroke patients¹
- People with dementia¹
- Patients with head and neck cancer¹
- People with intellectual disabilities³

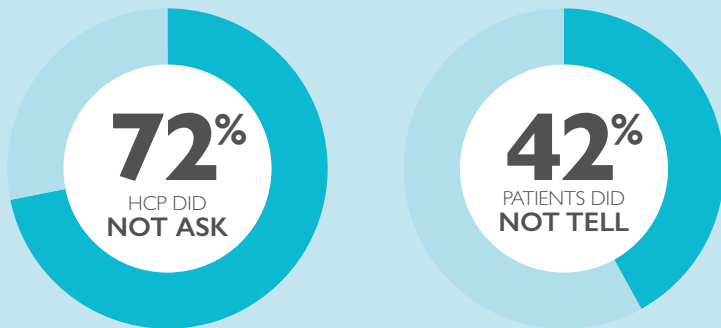
There are also concerns about the age at which children can safely swallow tablets.⁴



An inability to take solid dosage forms can compromise medicines adherence and therapeutic outcomes⁵. People with swallowing difficulties often resort to crushing tablets or opening capsules⁵ but this may change the bioavailability of the medicine and increase the risk of an adverse drug reaction (ADR)⁶.

Liquid medicines can help avoid these risks by providing an easier to swallow, more appropriate formulation⁷.

MANAGING PATIENTS WITH SWALLOWING DIFFICULTIES



If a patient is unable to swallow their medicines, they are unlikely to take them⁷

Difficulty swallowing solid-dose medication is one of the factors associated with non-compliance.⁵ 50% of patients with chronic illness do not take medication as prescribed, compromising patient outcomes and increasing mortality.¹¹ Improving compliance is critical both to improve outcomes and to reduce wastage.¹² Non-adherence limits the benefits of medicines and NICE guidelines recommend that a patient-centred approach to medicines management that encourages adherence should be adopted.⁸

Does the patient have difficulty swallowing?

Healthcare professionals (HCPs) are best placed to help patients make informed decisions about their treatment⁸, and guidelines suggest that patients or carers should be asked whether there is a problem swallowing medication⁹. Despite that, a study showed **72%** of patients reported that their doctor or nurse never asked if they had difficulty taking tablets before writing the prescription⁵.

Does the patient take their medicines as prescribed?

Healthcare professionals are often unaware that patients do not always take their medicines exactly as prescribed, as many patients do not tell them due to fears of displeasing them⁸. One survey suggested that **42%** of patients did not tell their HCP that they were not adhering due to swallowing difficulty¹⁰.



A daily occurrence⁶

In a survey, over two thirds of care homes suggested that crushing tablets and other forms of manipulation occurred daily.⁶ This can change the pharmacokinetic or bioavailability profile of a medicine^{9,13} and affect how the body absorbs the drug, reducing efficacy and/or increasing the risk of side effects.¹³ Some solid dose medications should never be altered without advice from a pharmacist. These include:⁹

- Modified release
- Enteric coated
- Hormonal
- Cytotoxic or steroidal
- Film and sugar-coated

Crushing can have unintended effects

If a modified release medication is damaged by chewing or crushing, this may mean the whole dose can be released more quickly than intended.⁷ This can result in an initial overdose of the medicine, followed by a subsequent period of under-dosing where the medical condition is not effectively treated.^{2,7} In addition, the taste of crushed medication may be unpalatable, adversely affecting compliance.⁷

Unknown effects of mixing with food

Especially in care homes, mixing medication with food or drink often occurs⁶ with the intention of aiding compliance. However, there is little data to demonstrate the effects this may have.¹⁴ It is recognised that bioavailability may be affected¹⁴ but other factors like absorption, incompatibility, and interactions need to be considered, and there may be little pharmaceutical information on stability available.¹⁵

Crushing encourages errors

According to a recent study, medication errors are three times more likely to occur when administering medication to patients with swallowing difficulties, than with patients with normal swallowing function.⁷ In care homes, one of the commonest types of error occurs as a consequence of crushing tablets.⁶

PEG/NG tubes

A substantial population of patients in hospitals, care homes and the community rely on enteral feeding¹⁶. Crushing solid medication has been shown to cause unnecessary enteral tube blockages¹⁷, with clogged PEG tubes occurring in up to 45% of patients^{18,19,20}.

Altering solid dose formulations should only be undertaken as a last resort and after appropriate advice has been sought from a pharmacist.⁹ In some cases, a liquid medication will offer a better option.⁶



In older patients, multiple diseases, complex medication regimes and the aging process complicate treatment⁷ and with more medications, they have an increased likelihood of medicine interactions as well as adverse reactions¹². They are also more likely to have developed a swallowing difficulty¹ and if they are crushing tablets to overcome this problem, the risk of ADRs may be increased due to changed bioavailability of the medicine⁶.

Many ADRs can be avoided

ADRs are common, despite best practice^{21,22}, but it has been estimated that 59% of them are potentially preventable¹². As older patients are at higher risk of experiencing both dysphagia⁶ and ADRs⁷, it is important that swallowing difficulties are addressed in this population. By providing formulations that patients can easily swallow, such as liquid medications, the number of ADRs that result in a hospital admission could be reduced¹².



To be compliant with the product licence of a medicine, it should be administered in the way described on the product licence. The Royal Pharmaceutical Society advises that if the formulation is tampered with, then the product will be unlicensed¹³.

The Nursing and Midwifery Council Guidance²³ adds that

'Medicinal products should not routinely be crushed unless a pharmacist advises that the medication is not compromised by crushing...'

Guidelines also state that choice of products to be prescribed should be in the following sequence²⁴, in line with the marketing authorisation wherever possible⁹:

1. Licensed product
2. Specials and licensed imports
3. Extemporaneous medicines
4. Manipulation of product as a last resort

Many solid medications are also available as licensed liquid medicines and more readily available than might be thought. Rosemont has a wide range of 70 licensed liquid products across a wide range of therapy areas, which as a solution to swallowing difficulties, are likely to be more appropriate and easier to swallow⁷.

Choosing the correct formulation can be as important as the treatment itself⁷.

To protect patients, the law requires that the right medicine is given to the right person at the right time, using the right dose and form⁹.

Personal liability

Changing the state of a medication to overcome a swallowing difficulty problem can remove the protection afforded by the Consumer Protection Act²⁵ and may mean that the prescriber, dispenser or giver of the medicine is personally liable for any harm done⁶.

Pharmacist legal obligation

The Disability Discrimination Act ensures that all disabled people should have access to medicinal products and pharmacists may be under a legal obligation to provide a liquid formulation for patients experiencing swallowing difficulties²⁵.

Patient-centred decisions

It has been recommended that pharmacists must bear in mind, the law, their professional responsibility and their own indemnity insurance, and make decisions about tablet crushing vs liquid medicines using professional judgement rather than being driven by cost²⁶.

Swallowing difficulty can affect the ability of patients to take solid-dose medication⁵ but non-adherence does not just affect patient outcomes.¹²

Unused medicines

In primary care alone, medicines that are unused or not taken and disposed of cost the DoH an estimated £1.3 billion a year¹².

Deteriorating health

Medicine which is proving difficult to take may not be taken at all⁷ and if health deteriorates, there are knock-on costs arising from increased demands for healthcare⁸.

ADRs

The cost of hospital admissions attributable to ADRs is approximately £625 million and the estimated cost of potentially avoidable ADRs in primary and secondary care is £1 billion¹².

CONCLUSION

Tablet manipulation can reduce a drug's effectiveness, increase the risk of side effects and has legal implications for all healthcare professionals⁶. In most therapeutic categories, there is a liquid medicine available⁶. Despite that, the practice of crushing tablets and opening capsules is widespread⁶.

A survey has suggested that the cost of liquid medication was a factor in prescribing arrangements for care home residents, even though liquid medications are a preferable option for people with swallowing difficulties⁶. Guidelines suggest the best formulation for the patient, rather than cost, should be the primary concern⁶.

A solution

Liquid formulations are often associated with a higher acquisition price than solid formats. However, a study in the Journal of Medical

Economics suggests that even using very conservative assumptions, improved compliance potentially offsets those extra costs¹².

As an example, preventing a single day's admission to a psychiatric hospital would fund liquid chlorpromazine instead of a solid generic formulation for 3 patients for a year¹².

Rosemont has more than 50 years experience and an unrivalled 70 licensed liquid products, including the only range of licensed liquid medicines approved for PEG/NG use. Consequently, Rosemont are uniquely placed to provide solutions for patients with swallowing difficulties that comply with the licence, are palatable² to patients and still make sense to budget holders¹².



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Rosemont Pharmaceuticals Ltd.

Rosemont House, Yorkdale Industrial Park,
Braithwaite Street, Leeds LS11 9XE

T +44 (0) 113 244 1400 **F** +44 (0) 113 245 3567

E infodesk@rosemontpharma.com

Sales / Customer Service

T +44 (0) 113 244 1999 **F** +44 (0) 113 246 0738

www.rosemontpharma.com



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