

A healthcare worker in blue scrubs is kneeling on a wooden floor, holding the hand of an elderly woman seated in a wheelchair. The woman is wearing a white hospital gown and is smiling. In the background, a hospital bed with white linens is visible. A teal banner with white text is overlaid on the left side of the image.

**Don't let crushing tablets
crush your budget**



Medication swallowing gel is your time and money saver:

Are you a healthcare professional, dealing with the crushing of tablets on a daily basis?

Are you curious to find out how you will be able to decrease the amount of crushes and decrease costs connected to this?

In that case you would want to read this white paper.

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Introduction:

You are a healthcare professional, working with patients or clients on a daily basis and giving it your all to make life just a bit easier or better for them. One essential part of patient care is the use and misuse of medication.

On a daily basis healthcare professionals are busy with pills and capsules, powders and fluids. Is it the right medication, is it the right dosage, is the patient allergic to anything, can the pills be crushed, can the patient take whole tablets and so on.

In 2017 in just a small country as the Netherlands (17 million inhabitants) the pharmaceutical costs were € 4.390 million (source: Data en Feiten stichting Farmaceutische Kengetallen), so that means millions of pills worldwide.

Administering medication in a correct way is a everyday struggle and concern for many healthcare professionals, and crushing tablets because of various reasons is daily practice. In some cases this is allowed, but there are many medicines that are cannot be crushed, and crushing them can lead to big problems. Second problem is that if the medication is allowed to be crushed, the crushing is time consuming and often leads to health problems for the nurse doing the crushing on a daily basis. It is known that manual crushing on a regular base often leads to wrist problems. Often people haven't even thought about the micro dust that comes off all those crushed pills, can you imagine what a nurse breaths in and gets on her skin?

And not even that; what does it cost to crush medication? Depending on your devices on the wards, it can take from 30 seconds up to 3 minutes to crush medication. This in a world of shortage of educated nurses is not at all ideal. Plus; as you crush medication, the liability is no longer with the manufacturer of the pill, as he stated that altering the medication is not the intended use [1,5].

So if there would be a device that could help you with decreasing the amount of crushes on a daily basis, it would probably be of your interest. If you want to find out how this could work for you, put your number in the cost benefit analysis.

Problems with crushing tablets:

All over the world an enormous amount of medicines are crushed every day. Reasons to crush are variable, but mostly due to psychological or physical problems. MIP (medication intake problems) are often psychological, as peoples body and brain simply refuse to swallow hard pills or tablets. If not psychological, than the physical reason is often a result from an underlying disease or illness. Dysphagia is a swallowing issue, which is often seen in elderly patients, in people with Parkinson's disease, Multiple Sclerosis or after a Stroke. These are the people that would need their pills crushed. The decision to crush medication should always be taken carefully, and alternatives should be tried when safe for the patient. Possible results of crushing could be:

- The nurse is exposed to micro dust of the medication. Inhalation via lungs and skin are a serious worry.
- Wrist problems are a common complaint with nurses that do manual crushing on a daily basis.
- Altering medication is off-label use, which means the manufacturer is no longer liable.
- Altering of a dosage may reduce stability, efficacy and palatability, and increase toxicity.
- Dose- dumping can occur when slow release tablets are crushed, which basically means a massive overdose (in 30 minutes you administer the dosage made for 24 hours). Even deaths have been reported.
- When enteric coated tablets are crushed, this could lead to destruction of the drug by the stomach acid, or local adverse effects in the stomach.
- Consider the side effects; if the drug is irritant, crushing may increase erosion in the mouth or esophagus [1].

In this white paper we don't go in depth when it comes to using food as an intake vehicle for medication, but there are many scientific studies stating that food is most often not the best choice for the intake of oral medication, due to the many interactions known and unknown with drugs[2,3,4]. So, with all that in mind, it is safe to say that you would want to avoid crushing of tablets as much as possible. We are aware of the fact that there will always be patients that cannot swallow whole tablets, due to the physical conditions, but from experience we know that there is always a group of patients that are able to swallow complete pills, with just a bit of practice and the right tools.

How to decrease crushing:

We created just that tool for you. Worldwide we have customers, healthcare institutions using our solution on a daily basis, with great results and decrease in crushing with some impressive figures to show.

We are talking about a medication swallowing gel that is created for those people that have problems with the intake of oral medication, but are still able to swallow independently. By training people to start using this product for the intake of their medication, you can decrease the amount of crushed medication dramatically.

So, now that you understand the product and how it works, we will tell you what you can actually save by working with this product. These numbers are based on an independent trail done in an Australian Nursing home, counting 160

beds. Their aim was to see whether they could decrease the amount of crushed pills with the use of Gloup. They tested on 4 departments and below you can see the numbers.

What you can see is that they were able to decrease the amount of crushes overall with 38%, in some departments even much higher. Worldwide we see figures that are in the same line of around 38%. However, in departments with low dementia patients, we even hear results up to 70% decrease of crushes!

Total Facility	No. of medications to be crushed.	No. of medications able to be administered using Gloup	Result in reduction of crushing of medications
Total Facility	332	126	38%
AM	206	83	40.5%
PM	118	35	30%
ND	8	6	75%

Cost- Benefit Analysis:		
Cost per nurse: Duration of crushing:	\$ 25,- per hour	\$0,42 per minute 2 minutes
Cost per crush: Cost Swallowing gel:	2 minutes x \$0,42	\$0,84 per crush \$0,35 per intake
Saving per crush:	\$0,84 - \$0,35	\$0,49
Saving per day in Australian Nursing Home 160 beds	\$0,49 x 126 less crushes	\$61,74
Saving per year with Gloup use 38%	\$61,74 x 365	\$22.535,10

To give you an idea on what that would mean financially, please see the table with the Cost- Benefit Analysis on the previous page.

In the model we used the numbers that the above facility achieved in testing, aiming at decreasing crushing.

Quite impressive don't you think? To sum this up, the use of Gloop in a facility like the one mentioned would save \$ 22,525,10 per year, just by a small adjustment of their medication administration procedure.

Conclusion:

So; if the products saves you money you would want to know whether the product is safe to use. Our products comply to the international guidelines used for products and consistencies for people with dysphagia.(more info at www.IDDSI.org). There are multiple consistencies available, 1 for each patient. So, did we manage to convince you that this product could be interesting for your facility or department, and are you curious to find out more about it?

The product works as simple as Gloop, Swallow, Gone.



tablet on spoon



add 5ml Gloop



swallow all at once

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5. Food-Drug Interactions Rabia Bushra, Nousheen Aslam, Arshad Yar Khan Rabia Bushra Nousheen Aslam College of Pharmacy Ziauddin college of Pharmacy, Ziauddin University, Karachi, Pakistan. E-mail: rabia_pharmacist@hotmail.com Arshad Yar Khan Dept. of Chemistry University of Karachi, Pakistan. Received: 17 Oct 2010 / Accepted: 09 Dec 2010 © OMSB, 2011

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