Safe administration of medications for adults with Swallowing Difficulties (Dysphagia)

**What is Dysphagia?**

Dysphagia is the term used to describe a swallowing disorder usually resulting from a neurological or physical impairment of the oral (mouth), pharyngeal (upper throat) or oesophageal (lower throat) mechanisms.

Speech and Language Therapists (SLT’s) play a key role in the diagnosis of dysphagia. Patients should be referred to a SLT for assessment if they are demonstrating symptoms of dysphagia, which include:

- Coughing or choking when eating or drinking
- A sensation that food is stuck in the throat or chest
- A ‘gurgly’ wet sounding voice when eating or drinking
- Being unable to chew food properly
- Regurgitating food
- Persistent drooling of saliva

If dysphagia is not treated timely and appropriately, it can result in choking, pneumonia, chest infections, dehydration, malnutrition, weight loss, increased hospital admissions and in the worst cases, death.

**Who is at Risk of Dysphagia?**

People with dysphagia often have other health conditions that they are being treated for which affects their eating, drinking and swallowing abilities. Dysphagia in adults is associated with many conditions, including:

- Stroke
- Dementia
- Multiple Sclerosis
- Cerebral Palsy
- Head Injury
- Parkinson’s Disease
- Motor Neurone Disease
- Surgery to head & neck
- Learning Disabilities
- Patients with Tracheostomies
- COPD
- Psychogenic causes

**Can dysphagia be treated?**

Treating dysphagia depends on what underlying condition or conditions a person may have. Some people experience dysphagia for only a short period of time, whereas others might have it for a longer period of time. SLT’s promote patient safety through advising on modifying the texture of food and fluids and helping patients to regain their swallowing through exercises, techniques and positioning.

Thickeners are used to thicken fluid for people with dysphagia (see here for WECCG guidance on prescribing thickeners). Thickening a fluid slows down its transit time through the mouth and throat which can help facilitate a safer swallow for those with dysphagia. The International Dysphagia Diet Standardisation Initiative (IDDSI) have published international standardised terminology and definitions for texture modified foods and thickened liquids for people with dysphagia.

The framework consists of a continuum of eight levels (0-7) and includes descriptors, testing methods and evidence for both liquid thickness and food texture levels (see appendix 1).

**Administration of medications to patients with dysphagia**

Dysphagia can make taking medication more difficult leading to medications remaining in the mouth, being spat out or getting stuck in the pharynx or oesophagus. If a dysphagia assessment recommends thickened liquids, all fluids consumed should be thickened, including those taken with or as part of medication.

**It must not be assumed that patients with dysphagia cannot swallow solid oral formulations** (whole tablets and capsules) and need to be prescribed liquids. This is a misconception; patients must be assessed according to the degree of dysphagia as thinner liquid medicines can increase the risk of coughing and aspiration in a patient with dysphagia. **Liquid formulations can be used, but only if thickened to the appropriate consistency**. If a medication is thickened, potential effects on absorption and availability should be considered, including whether any additional monitoring is required.

A multi-disciplinary approach is required to ensure appropriate knowledge of fluid consistency, food texture, medications and drug-food interactions are understood in order to advise patients on the safest and most efficacious formulation.
ASSESS THE RISK

Is the patient...

- Spitting out medications?
- Coughing when trying to swallow medications?
- Showing signs of distress when swallowing medications?

RISK IDENTIFIED

| Perform a Medication Review: | Involve the patient/ carer, pharmacist and SLT/ dietitian (as appropriate) as all aspects must be considered for each medication that is required. |

FOR EACH MEDICATION follow this stepwise process:

STEP 1: Check that the medication is still indicated and required
If the swallowing difficulty is temporary, can any be temporarily withdrawn?
If dysphagia is long-term should they be permanently stopped if the risks outweigh the benefits?

STEP 2: Check SLT recommendations and confirm required consistency of liquids and food
What IDDSI levels of Thickened Liquid and Texture Modified Food are recommended and tolerated?

STEP 3: Check whether the current medication is a safe consistency
Is current formulation consistent with SLT recommendations? (see step 2)

STEP 4: For a safer swallow and slow oesophageal transit, medication may need to be formulated as thicker fluids or mixed with more textured food. Where possible, tablets and capsules should be administered whole and intact with the appropriate food texture and liquid consistency. Check what size of tablet the patient can comfortably swallow. Small tablets, such as those measuring less than 4mm (including bisoprolol and levothyroxine), may be suitable. Compatibility with suitable consistency of food must be checked for drug-food interaction (e.g. levothyroxine, bisoprolol, ramipril). Discuss with a pharmacist.

STEP 5: Is there an alternative licensed formulation which can be used without manipulating e.g. dispersible tablets, patch, suppository, oral powder, injection, granules or licensed liquid formulation. Liquid formulations can only be used if thickened to the appropriate consistency. If a medication is thickened, potential effects on absorption and availability should be considered, including whether any additional monitoring is required.

STEP 6: Is there a suitable formulation of another drug within the same therapeutic class?

STEP 7: Consider if you can use a licensed medicine in an unlicensed way:
- Altering the form e.g. crushing a tablet & mixing with water or opening capsule (Refer to pages 3-4). If mixing with water, the solution must be thickened to the appropriate, safe consistency. If a medication is thickened, potential effects on absorption and availability should be considered, including whether any additional monitoring is required.
- Discuss suitability of altering the form with a pharmacist, check individual product information.
- Changing the way in which a dosage form is presented can alter its absorption characteristics, produce local irritant effects, cause failure to reach the site of action, and could result in an unacceptable taste.
- Written directions to crush or disperse tablets or to open capsules MUST be documented in the patient’s care plan (where care staff are involved in administration) and should specify the exact directions on the prescription and to the dispensing label.
- Patients should be aware of medication being administered; a crushed tablet in a suitable consistency of food for example is not designed to disguise the medication, but to aid the patient.
- For patients that are deemed to lack capacity around taking medications, a multi-disciplinary meeting should be arranged to determine what would be in the patients best interests.

STEP 8: ONLY IF there is no licensed medicine that can be used which meets the patient’ needs should you consider an unlicensed special formulation of the drug listed in part VII B of the Drug Tariff.
- These “specials” are unlicensed and often expensive, they may have a short shelf-life, may need refrigeration and some may contain alcohol. Ask the pharmacist for advice.
- The patient /family must be made aware that an unlicensed medication is being used and this must be documented. Clinician liability is higher because it is an unlicensed medication.
- Liquid formulations can only be used if thickened to the appropriate consistency. If a medication is thickened, potential effects on absorption and availability should be considered, including whether any additional monitoring is required.

STEP 9: Check the person administering knows how to prepare and administer the medication
General guidelines for administration of medications to patients with swallowing difficulties

The following advice for administration of medications to patients with swallowing difficulties is based on the NEWT Guidelines.

General notes:

1. Crushing tablets and opening capsules is almost always outside the product license. Risk should be considered and documented in patient notes. The prescriber will be issuing a licensed product to be used in an unlicensed way.

2. Sometimes medication can be added to food (outside product license). When this is done it should be added to the first mouthful of a suitable consistency of food so the whole dose is given once drug-food interactions have been excluded.

3. Crushing modified-release preparations in patients with swallowing difficulties is not appropriate (see section below for information on MR products containing ‘beads’). If a modified-release tablet is crushed, an increase in the expected peak plasma level may occur (“dose-dumping”). The patient will be initially exposed to significantly higher-than-normal levels which will increase the chance of side effects. Later, the drug will not last the full dosage interval, resulting in a period with little or no drug present, possibly resulting in loss of control of the patient’s condition. If kept whole, modified release preparations can be administered with a suitable consistency of food (outside product licence) once any drug-food interactions have been excluded.

<table>
<thead>
<tr>
<th>Formulation Type</th>
<th>Comments</th>
<th>Notes</th>
</tr>
</thead>
</table>
| Liquids              | Liquid formulations can only be used if thickened to the appropriate consistency. | • If a liquid medication is thickened, potential effects on absorption and availability should be considered, including whether any additional monitoring is required.  
  • Sorbitol-containing preparations can cause diarrhoea when large volumes are given.  
  • Hyperosmolar liquids can cause nausea, bloating, and diarrhoea.  
  • Dilution of liquids with water can reduce their osmolality and so reduce the rate of adverse effects. |
| Standard tablets     | If tablets need to be halved for the right dose use a tablet splitting device. Such devices split tablets more accurately. Scored tablets are designed to be split. | • Crushed tablets are often unpalatable and may sometimes have an anaesthetic effect on the oral mucosa, which can put the patient at risk of burns.  
  • Rinsing the mouth with an appropriately thickened fluid after administration of tablets may help to reduce this. |
| Sugar-coated (s/c) and film-coated (f/c) tablets | Usually coated to improve appearance or to mask unpleasant taste, usually suitable for crushing, although the presence of the coating may make crushing difficult. | • Crushed tablets are often unpalatable and may sometimes have an anaesthetic effect on the oral mucosa, which can put the patient at risk of burns.  
  • Rinsing the mouth with an appropriately thickened fluid after administration of tablets may help to reduce this. |
| Dispersible and effervescent tablets | Dispersible and effervescent tablets can usually be administered to patients with swallowing difficulties in the normal manner | • Should not be mixed with fluids other than water unless specifically indicated in the product information as this is outside the product licence. Please check the resulting suspension is of an appropriately thickened consistency.  
  • Most dispersible and effervescent formulations contain sodium, which may be a problem in sodium restricted patients. |
<p>| Capsules             | Ensure that the capsule is not modified release or controlled             | • Capsule contents are often unpalatable, and they may have an anaesthetic effect on the oral mucosa. |</p>
<table>
<thead>
<tr>
<th>Medication Type</th>
<th>Instructions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buccal and sublingual tablets – Do not crush</td>
<td>Can usually be used as normal.</td>
<td>• The capsule shell may provide stability to the medication or protect it from gastric acid.</td>
</tr>
<tr>
<td>Hormone, steroid, antibiotics</td>
<td>Crushing or opening may cause some of the medicine to go into the air as dust particles.</td>
<td>• The particles may cause side effects to the person crushing the tablets (measures must be taken to prevent skin contact and inhalation by wearing gloves and/or masks) and advice taken from a pharmacist on how to safely prepare the product for administration.</td>
</tr>
<tr>
<td>Enteric-coated (e/c) tablets – Do not crush</td>
<td>The coating is designed to prevent drug dissolution in the stomach and promote absorption in the small intestine.</td>
<td>Crushing may result in undesirable side effect such as stomach irritation and also a decrease in drug effectiveness.</td>
</tr>
<tr>
<td>Modified-release (MR) and controlled-release (CR) preparations (also ER, SR, LA, XL, XR, Retard, Once Weekly) – Do not crush</td>
<td>A conversion to a non-modified-release preparation is necessary, usually requiring a dose decrease and a dosing frequency increase</td>
<td><strong>BUT:</strong> Some modified-release capsules contain beads or granules which can be given in water or food at a suitable consistency for the patient. However there is a risk of excessive dose if the beads / granules are crushed prior to swallowing. This method should only be used where it is the best possible option for a specific patient, and only if the patient has the ability and understanding to be able to swallow the water / food without chewing.</td>
</tr>
<tr>
<td>Cytotoxic medication – Do not crush</td>
<td>Avoid contact with cytotoxic drugs: Risk of cytotoxic powder being aerosolized if tablets are crushed, exposing staff to hazardous materials. Cytotoxics should be handled in accordance with local procedures.</td>
<td></td>
</tr>
</tbody>
</table>
Managing Medication through Enteral Feeding Tubes

Drug administration via enteral feeding tubes is almost always an unlicensed method of administration, in all cases, alternative (licensed) routes of administration should be sought. The tubing itself can have an effect on drug absorption.

Patient response to drugs administered via unlicensed routes can be unpredictable. Drugs may have a different therapeutic effect or onset or duration of action than when given by the oral route. Side effects, particularly those involving the gastrointestinal system, are likely to be exacerbated. The side effects of drugs which have been given by an unlicensed route are also the responsibility of the prescriber. There is always a risk of tube blockage and also of drug-tube interactions. Nutrients in the feed may affect absorption and therefore blood levels. Many liquid medications are hyperosmolar or hypertonic, and when administered directly into the jejunum osmotic diarrhoea and nausea can occur.

When drug administration via enteral feeding tubes is necessary, the prescriber takes responsibility for the off-licence use of the drug concerned. Giving medicines via alternate routes (e.g. via enteral feeding tubes) or by alternate methods (e.g. crushing tablets) contrary to the directions of a prescriber is a breach of the Medicines Act 1968, and could result in a finding of professional misconduct.

If putting medication down an enteral feeding tube is unavoidable then it is sensible to keep drug therapy to a minimum. The dietitian and the pharmacist should be involved in the review and decision process. If any of the medication has to be given during feeding breaks, consult with the dietitian and pharmacist to rearrange doses and feeding breaks to coincide.

Drugs should only be put down a feeding tube as a last resort because of the implications for drug therapy and nutritional status.

Perform a Medication Review with the dietitian and pharmacist.
Is each medication still indicated and required?
FOR EACH MEDICATION THAT IS TO BE CONTINUED follow this stepwise process:

**STEP 1:** Can the current oral medication be administered by an alternative route?
Rectal, transdermal, parenteral, sublingual/buccal

**STEP 2:** Can the current oral medication be changed to another medication which has a more suitable method of administration?

**STEP 3:** If the medication cannot be changed to an alternate route or medication, does it come as a LICENSED liquid or as a dispersible / soluble tablet? These are the preferred formulations

**STEP 4:** ONLY IF there is no licensed medicine that can be used which meets the patient’ needs should you consider an unlicensed special formulation of the drug listed in part VII B of the Drug Tariff. These “specials” are unlicensed and have not been assessed by the regulatory authority for safety, quality and efficacy in the same way as a licensed product. Often expensive, they may have a short shelf-life, may need refrigeration and some may contain alcohol. Ask the pharmacist for advice. Clinician liability is higher because it is an unlicensed medication.

The patient/family must be made aware that an unlicensed medication is being used and this must be documented.

**STEP 5:** When changing from solid to liquid dosage forms, should any dose changes be made? Some drugs have different bioavailability, some use different salts in liquid preparations. Discuss with pharmacist

**STEP 6:** Does the feeding regimen need to be adjusted? Feeding breaks may be needed and drug frequency may need to be adjusted. Discuss with the dietitian and pharmacist.
The NEWT Guidelines provides the following advice regarding administration of medications through enteral feeding tubes:

- Do not mix medications together during preparation, dispersal or in the syringe. Give them separately.
- Never add medication to the feed.
- Some injectable drugs are suitable for oral administration via enteral feeding tubes BUT check individual drug monographs carefully, those with high polyethylene glycol content are NOT suitable.
- When medication have to be given via enteral feeding tubes, liquids or dispersible tablets are the preferred formulation
- Increase monitoring for clinical effectiveness and adverse events following any medication changes.

General notes about formulations:

1. Crushing tablets and opening capsules is almost always outside the product license. Risk should be considered and documented in patient notes. A licensed product is being used in an unlicensed way.
2. Unlicensed ‘specials’ liquids are made by licensed specials manufacturer and have higher clinical liability than crushing tablets/opening capsules. Risk should be considered and documented in patient notes and the patient informed that it is an unlicensed product. They are also expensive, usually made to order and may have a short shelf life and/or require refrigeration.
3. Crushing modified-release preparations is not appropriate as an increase in the expected peak plasma level may occur (“dose-dumping”). The patient will be initially exposed to significantly higher-than-normal levels which will increase the chance of side effects. Later, the drug will not last the full dosage interval, resulting in a period with little or no drug present, possibly resulting in loss of control of the patient’s condition. Modified-release preparations are also unlikely to disperse completely when crushed, leading to an increased risk of tube occlusion.

<table>
<thead>
<tr>
<th>Formulation Type</th>
<th>Comments</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispersible and effervescent formulations</td>
<td>Preferred formulation. These have a low osmolality and will not cause diarrhoea.</td>
<td>Most dispersible and effervescent formulations contain sodium; this may be a problem in sodium restricted patients.</td>
</tr>
<tr>
<td>Liquids</td>
<td>Preferred formulation.</td>
<td>Sorbitol-containing preparations can cause diarrhoea when large volumes are given. Hyperosmolar liquids can cause nausea, bloating, and diarrhoea. Dilution of liquids with water can reduce their osmolality and so reduce the rate of adverse effects.</td>
</tr>
<tr>
<td>Standard tablets</td>
<td>Crushing should be avoided. If crushing is the only option then the tablets should be crushed well enough to prevent clogging of the tube. It is important to ensure that the whole dose is administered. If tablets need to be halved for the right dose use a tablet splitting device. Such devices split tablets more accurately. Scored tablets are designed to be split.</td>
<td>Care should be taken when crushing drugs which have a high incidence of allergic reactions e.g. antibiotics, chlorpromazine</td>
</tr>
<tr>
<td>Sugar-coated (s/c) and film-coated (f/c) tablets</td>
<td>Usually coated to improve appearance or to mask unpleasant taste, usually suitable for crushing</td>
<td>The coating may make crushing difficult and increase the probability of the drug blocking the enteral feeding tube: ensure the coating is well broken up, and that the feeding tube is flushed well after the dose</td>
</tr>
<tr>
<td>Enteric-coated (e/c) tablets</td>
<td>The coating is designed to prevent drug dissolution in the stomach and promote</td>
<td>When crushed, the tablet will break into small chunks that bind together when</td>
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<tr>
<td>do not crush</td>
<td>absorption in the small intestine: If the tablet is crushed and passed down the enteral feeding tube, undesirable side effects may occur such as stomach irritation and a decrease in drug effectiveness.</td>
<td>moistened and subsequently clog the feeding tube.</td>
</tr>
<tr>
<td>Buccal and sublingual tablets</td>
<td>Buccal and sublingual tablets are suitable to be used as normal in most cases even if nil by mouth, provided the patient is safe to have tablets held in their mouth, and is still producing normal quantities of saliva.</td>
<td>Drugs formulated in these dosage forms are designed not to pass through the stomach in order to avoid the first pass metabolism effects in the liver. If these tablets are passed down the enteral feeding tube, drug effect will be decreased.</td>
</tr>
<tr>
<td>Hormones, steroids, antibiotics</td>
<td>Crushing or opening a may cause some of the medicine to go into the air as dust particles.</td>
<td>The particles may cause side effects to the person crushing the tablets or (measures must be taken to prevent skin contact and inhalation by wearing gloves and/or mask ) and advice taken from a pharmacist on how to safely prepare the product for administration</td>
</tr>
</tbody>
</table>

**THESE FORMS ARE NOT SUITABLE**

| Modified-release (MR) and controlled-release (CR) preparations (also ER, SR, LA, XL, XR, Retard, Once Weekly) | Not suitable. A conversion to a non-modified-release preparation is necessary, usually requiring a dose decrease and a dosing frequency increase. |  |
| Cytotoxic medicine. | Avoid contact with cytotoxic drugs: Risk of cytotoxic powder being aerosolized if tablets are crushed, exposing staff to hazardous materials. Cytotoxics should be handled in accordance with local procedures. |  |
| Chewable tablets – | Some of these tablets, e.g. Tegretol® Retard Chewtabs, are formulated so that they are partially absorbed in the mouth. If the tablet is crushed decreased drug absorption will occur. | Take advice from manufacturer. |
References


6. What are the considerations when crushing tablets or opening capsules in a care home setting? https://www.sps.nhs.uk/wp-content/uploads/2015/01/UKMi_QA_crushing_care-homes_Nov18_FINAL.docx Accessed 30/05/2020


8. The NEWT guidelines for administration of medication to patients with enteral feeding tubes or swallowing difficulties. http://www.newtguidelines.com/ Accessed 30/05/2020


Produced by NHS West Essex CCG Medicine’s Optimisation Team, July 2020

Review Date June 2022
### IDDSI Descriptors for Thickened Liquids: Levels 0-4

<table>
<thead>
<tr>
<th>FLUIDS</th>
<th>LEVEL 0</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thin</td>
<td></td>
<td><em>Slightly Thick</em></td>
<td><em>Mildly Thick</em></td>
<td><em>Moderately Thick</em></td>
<td><em>Extremely Thick</em></td>
</tr>
<tr>
<td>Flows like water</td>
<td></td>
<td>Are thicker than water</td>
<td>Are ‘sippable’</td>
<td>Can be drunk from a cup or taken with a spoon</td>
<td>Are usually eaten with a spoon</td>
</tr>
<tr>
<td>Fast Flow</td>
<td></td>
<td>Requires a little more effort to drink than thin liquids</td>
<td>Pour quickly from a spoon but slower than Thin drinks and Slightly Thick drinks</td>
<td>Moderate effort to drink them through a wide diameter straw</td>
<td>Cannot be drunk from a cup or sucked through a straw</td>
</tr>
<tr>
<td>Can flow through a straw</td>
<td></td>
<td>Can flow through a straw</td>
<td>Mild effort to drink this thickness using a standard straw</td>
<td>Have a smooth texture with no lumps</td>
<td>Do not require chewing</td>
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<td></td>
<td></td>
<td></td>
<td>Have a smooth texture with no lumps, fibers or seeds</td>
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<td></td>
<td>Hold shape on a spoon</td>
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<td></td>
<td></td>
<td>Fall off a spoon in a single spoonful when tilted</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>No lumps &amp; not sticky</td>
</tr>
<tr>
<td>Level 3</td>
<td>Level 4</td>
<td>Level 5</td>
<td>Level 6</td>
<td>Level 7</td>
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<tr>
<td>‘Liquidised’</td>
<td>‘Pureed’</td>
<td>‘Minced and Moist’</td>
<td>‘Soft and Bite-Sized’</td>
<td>‘Easy to chew’</td>
<td></td>
</tr>
<tr>
<td>Can be eaten with a spoon or drunk from a cup</td>
<td>Are usually eaten with a spoon</td>
<td>Can be eaten with a folk</td>
<td>Can be eaten with a folk or spoon</td>
<td>Normal, everyday foods of soft/tender textures that are developmentally and age appropriate</td>
<td></td>
</tr>
<tr>
<td>Cannot be eaten with a fork because it drips through the fork prongs</td>
<td>Do not require chewing</td>
<td>Can be scooped and shaped</td>
<td>Soft, tender and moist, but with no separate thin liquid</td>
<td>Any method may be used to eat these foods</td>
<td></td>
</tr>
<tr>
<td>Has a smooth texture with no ‘bits’ (lumps, fibers, husk, bits of shell or skin, particles of gristle or bone)</td>
<td>Have a smooth texture with no lumps</td>
<td>Soft and moist with no separate thin liquid</td>
<td>Chewing is required before swallowing</td>
<td>Food may be a range of sizes</td>
<td></td>
</tr>
<tr>
<td>Liquid (like sauces) must not separate from solids</td>
<td>Hold shape on a spoon</td>
<td>Minimal chewing required</td>
<td>‘Bite-sized’ pieces no larger than 15mm</td>
<td>May include ‘mixed consistency’ foods (for example, cereal with milk or soup with vegetables pieces)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fall off a spoon in a single spoonful when tilted</td>
<td>Small lumps equal to or less than 4mm wide and no longer than 15mm in length</td>
<td>Food can be mashed/broken down with pressure from fork or spoon</td>
<td>Does not include hard, tough, chewy, fibrous, stringy, crunchy/ crumbly bits, pips, seeds, husks or bones</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are not sticky</td>
<td>Lumps easy to squash with the tongue</td>
<td>A knife is not required to cut this food</td>
<td>Requires ability to chew without tiring easily</td>
<td></td>
</tr>
</tbody>
</table>

For further information regarding descriptors, testing methods and evidence for both liquid thickness and food texture levels, see [https://iddsi.org](https://iddsi.org)