

## Standardisation of the Most Common Liquid Medicines in Paediatrics

A project was undertaken in 2017 to improve the safety, regarding the prescribing of liquids, as children make the transition between secondary and primary care. As a result of this work, the five Trust Pharmacy Departments in Northern Ireland standardised the products that they stock and dispense/supply.

The Neonatal and Paediatric Pharmacists Group (NPPG) and Royal College of Paediatrics and Child Health (RCPCH) strongly recommend that children should receive standardised strengths of unlicensed liquid medicines in children, and have published a [list](#) of recommended standardised medicine strengths. This list has been incorporated into the Northern Ireland Agreed List, with further recommendations for additional products that are commonly used in paediatrics in Northern Ireland.

NPPG and RCPCH have also produced a [position statement](#) (Nov 2020) on Choosing an Oral Liquid Medicine for Children, to help pharmacists review suitability of formulations for children, including acceptable parameters for excipients in children.

Careful consideration of excipient content is necessary when selecting an appropriate oral liquid product for neonates and children. For some medicines, an unlicensed medicine may contain fewer undesirable excipients or excipients at lower levels than the licensed product. However, the quality, safety and efficacy of unlicensed medicines must be assessed by the purchaser and prescriber.<sup>1</sup>

Consideration should be given in primary care to changing patients to these “standardised” formulations in order to reduce the likelihood of errors across the interface and therefore enhance patient safety.

The following list of liquid preparations should be prescribed exactly as they are described, ensuring that particular attention is paid to the formulation and strength specified.

This document will be reviewed as licensed products become available.

Drug	Standardised form, strength and preferred manufacturer	Comments
<b>Licensed Products</b>		
Captopril	Captopril 25mg/5ml oral solution sugar free (Noyada <sup>®</sup> by Martindale)	Some patients may find this formulation unpalatable. Noyada <sup>®</sup> used in local Trusts.
Clonidine	Clonidine 50 micrograms/5ml oral solution	Various generics available. May be prescribed generically, i.e. no preferred brand, but ensure strength is as stated.

<sup>1</sup> NPPG and RCPCH [position statement](#) (Nov 2020)

Colecalciferol	Colecalciferol (Fultium D3 <sup>®</sup> 2,740 units/ml oral drops)	<p>Note: 3 drops of Fultium D3<sup>®</sup> 2,740 units/ml contains 200 units of colecalciferol (vitamin D3)</p> <p>Licensed colecalciferol preparations should be used in preference to unlicensed ergocalciferol.</p>
Furosemide	Furosemide 50mg/5ml oral solution sugar free (Frusol <sup>®</sup> by Rosemont)	<p>Furosemide oral solutions contain alcohol. By using a <b>higher strength</b> of furosemide oral solution in children, a smaller volume of liquid can be given. The lower volume of liquid means that the <b>alcohol exposure per dose will be reduced</b>.</p> <p>Frusol<sup>®</sup> used in local Trusts.</p>
Glycopyrronium bromide	Glycopyrronium 1mg/5ml oral solution (Colonis <sup>®</sup> )	The Colonis product contains the excipients glycerol and sorbitol which may make it unsuitable for some patients. Consider individual patient need.
Levothyroxine	<p><b>Tablets are the preferred option.</b></p> <p>Liquid alternative if tablets not suitable: Levothyroxine 50 micrograms/5ml oral solution</p>	<p>Tablets are preferred. Liquids can be subject to dose variation due to inconsistency in the formulation and the administration.</p> <p>Licensed 12.5 microgram tablets are available.</p> <p>Tablets disperse easily in a small amount of water for children who cannot swallow tablets.</p> <p>Zentiva (generic) oral liquid is used in local Trusts.</p> <p><b>Avoid Wockhardt</b> (generic) oral liquid as this product contains a significant amount of propylene glycol.</p>
Melatonin	<p><b>Tablets are the preferred option.</b></p> <p>Liquid alternatives are available if tablets are not suitable:</p> <p>Licensed melatonin 1mg/ml sugar free oral solution (e.g. Consilient Health and Colonis Pharma Ltd) are the preferred products when a liquid is required.</p> <ul style="list-style-type: none"> <li>Choice is complex depending on</li> </ul>	<p>Refer to <a href="#">HSC Melatonin Paediatric Product Selection Guide</a></p> <p>Refer to <a href="#">Melatonin Shared Care Guideline</a></p> <p><i>Note: Colonis liquid contains 150mg/ml propylene glycol which makes it unsuitable for under 5 years.</i></p> <p><i>Note: Martindale (Ethypharm) melatonin 1mg/ml oral solution SF and Kidmel (melatonin) 1mg/ml oral solution SF are the unlicensed formulations used in local Trusts.</i></p>

	<p>excipients, dosage and age of child.</p> <ul style="list-style-type: none"> <li>Specify manufacturer to be prescribed / dispensed in, e.g. dosage field of prescription.</li> </ul>	
Omeprazole and lansoprazole	<p><b>Tablets are the preferred option.</b></p> <p>Liquid alternatives if tablets not suitable:</p> <p>1) Omeprazole 10mg/5ml oral suspension sugar free (Rosemont)</p> <p>2) Omeprazole 10mg/5ml oral suspension (Quzole powder and diluent for oral suspension) <b>[unlicensed]</b></p>	<p><b><u>Lansoprazole orodispersible tablets or omeprazole tablets are the preferred choice</u></b> - see <a href="#">SPPG Omeprazole / Lansoprazole / Ranitidine in Infants Supplement</a> for information on dosages and how to administer.</p> <p>Lansoprazole orodispersible tablets can also be placed on the child's tongue and allowed to melt. See <a href="#">Medicines for Children for information on how to do this.</a></p> <p>If a liquid is necessary, use the licensed formulation omeprazole <b>10mg/5ml</b> oral suspension sugar free x 75ml (Rosemont). Some children find the Rosemont oral suspension unpalatable.</p> <p>Quzole powder and diluent for oral suspension) <b>[unlicensed]</b> is used in local Trusts.</p> <p>There should be a trial of discontinuing omeprazole / lansoprazole when child is weaning, and after every 6 months.</p>
Trihexyphenidyl	<p><b>Tablets are the preferred option.</b></p> <p>Liquid alternative if tablets not suitable: Trihexyphenidyl 5mg/5ml oral syrup (Rosemont)</p>	<p>Tablets disperse easily in a small amount of water for children who cannot swallow tablets.</p> <p>Rosemont oral syrup contains ethanol and propylene glycol, but the amounts are small.</p>
<b>Unlicensed Products*</b>		
Phenobarbital	<p>Phenobarbital 50mg/5ml oral solution (<b><u>alcohol free</u></b>).</p>	<p>The licensed product (15mg/5ml elixir) contains 38% alcohol and is therefore <b><u>not</u></b> suitable in children.</p> <p>Huddersfield Royal Infirmary Pharmacy</p>

	This is an unlicensed special.	<p>Manufacturing Unit product is used in local Trusts.</p> <p>As per <a href="#">SPPG Generics Exception List</a>, phenobarbital should be prescribed as generic name and manufacturer stated. Therefore, <b>maintain on the same brand.</b></p>
Sodium Chloride	Sodium Chloride 5mmol/ml oral solution (or 292mg/ml or 1.46g/5ml)	<p>This product is detailed on Merlok as sodium chloride 5mmol/ml (292mg/ml) and on EMIS/VISION as sodium chloride 1.46g/5ml (5mmol/ml).</p> <p>St Marys Pharmaceutical Unit is the product used in local Trusts.</p>
Spironolactone	Spironolactone 50mg/5ml oral liquid	No preferred brand, but ensure strength is as stated.
Tacrolimus	Tacrolimus 5mg/5ml (Specials Laboratory, (also known as PCCA))	<p>As per <a href="#">SPPG Generics Exception List</a>, tacrolimus should be prescribed by brand. Therefore, <b>maintain on the same brand.</b></p> <p><b>Refer to specialist if unsure of brand.</b></p>

\* Unlicensed preparations above are available from the following manufacturing units: (refer to BNF for full list of manufacturing units)

Martindale Pharmaceuticals (Ethypharm)  
 Telephone: 01628 551 900  
 Email: [info@ethypharm.co.uk](mailto:info@ethypharm.co.uk)

Special Products (Veriton) (Kidmel)  
 Telephone: 01932 690 325  
 Email: [info@veritonpharma.com](mailto:info@veritonpharma.com)  
 Fax: 01932 341 091

Huddersfield Royal Infirmary Pharmacy Manufacturing Unit  
 Telephone: 01484 355388  
 Email: [hps.orders@cht.nhs.uk](mailto:hps.orders@cht.nhs.uk)  
 Fax: 01484 355377

St Mary's Pharmaceutical Unit, Cardiff  
 Telephone: 02920 748122  
 Email: [smpu@wales.nhs.uk](mailto:smpu@wales.nhs.uk)  
 Fax: 02920 748130

Specials Laboratory (PCCA)  
 Telephone: 0800 028 4925  
 Email: [orders@specialslab.co.uk](mailto:orders@specialslab.co.uk)  
 Fax: 0800 083 4222

### Queries on excipients in paediatric medicines

**If you have a query on an excipient please refer to the following resources –**

**From secondary care:** refer to your clinical paediatric pharmacist or medicines information pharmacist.

**From primary care:** refer to the Regional Medicines and Poisons information Service.  
Medicines and poisons information and adverse drug reaction Yellow Card reporting (eYC)  
services: Monday to Friday between 9:00 am - 5:00 pm

☎: **Enquiry Service Line: 028 9504 0558**

✉: [medicineinfo@belfasttrust.hscni.net](mailto:medicineinfo@belfasttrust.hscni.net)