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Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean

The Wise List and Environmental Considerations — 15 Years of Experience

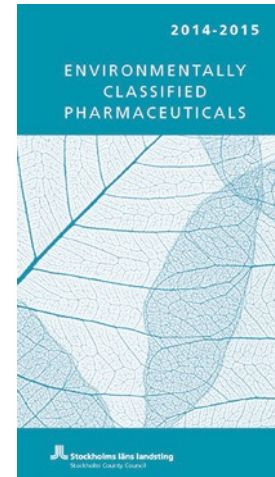
2017-06-21

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The Wise List



Environmentally Classified
Pharmaceuticals

County Councils in Sweden



- 21 county councils are responsible for the healthcare in Sweden.
- Each county council has at least one drug and therapeutic committee, DTC.
- The DTCs formulate treatment recommendations.
- The recommendations are usually published in a recommendation list. In Stockholm the list is called The Wise List.

The Wise List Concept

Some examples are:

- Doctors and pharmacists visit health clinics and inform the prescribers
- There are two versions of the Wise List:
 - one for prescribers
 - one for patients
- Information campaigns



Environmental Information

- Doctors and pharmacists visit health clinics and inform the prescribers.
- Every clinic has an environmental goal. A common goal is that 80 % of the prescribers get information about the environmental impact of pharmaceuticals.



Pharmaceuticals in treated wastewater in Stockholm

Every year the sea is supplied with:

930 kg pharmaceuticals for cardiovascular diseases

670 kg pharmaceuticals for nervous system and pain

150 kg antibiotics



Pharmaceuticals in the Wastewater

< 10 % from hospitals

> 90 % from households



Photo: iStock/Floortje

Environmental Considerations in the Wise List since 2005



- A list of recommended pharmaceuticals for common diseases issued by the Drug and Therapeutics Committee.
- More than 80 % of the prescribed pharmaceuticals are in accordance to the recommendations in the Wise List.

Environmentally Classified Pharmaceuticals — started in 2003

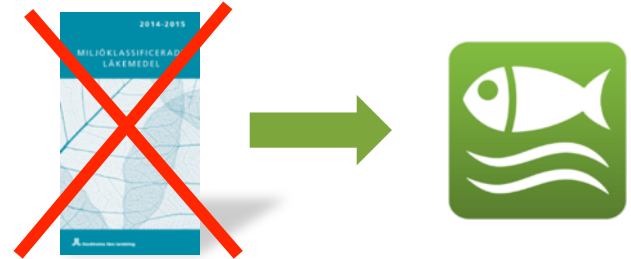
Pharmaceutical substances are assessed with respect to:

- Environmental hazard (2003)
- Environmental risk (2005)



Environmentally Classified Pharmaceuticals now in a Database

- Environmental hazards and risks
- Results from environmental monitoring of surface water, drinking water and fish
- Information from different research projects
- Degradation in wastewater treatment plants





janusinfo.se/environment

Environment and Pharmaceuticals

  In Swedish Print

Here you can find information for the environmental impact of pharmaceuticals. You can search for the product name, the substance name or to get an overview, search for ATC Code (ATC group). Unless otherwise is stated, the environmental impact means impact of pharmaceuticals when used.



Information for the classification

The first search view presents information about the classification of the environmental **hazard** and the environmental **risk**. The environmental hazard is classified from 0-9, where a high number indicates high properties for making an environmental impact.

The classification of the risk comes from fass.se and is based on theoretical calculations of the risk, posed by the pharmaceutical substances when used at their current extent in Sweden. For more information see in the menu to the right, Classification.

For some substances there is also a risk assessment made on the basis of concentrations measured in the environment in Sweden and efficacy studies with high quality. This assessments are presented in the document for the substances and is made by independent ecotoxicological expertise. A work is going on to gradually present substance documents with this type of information and also present comparisons of the environmental risks of substances who are recommended for the same indication. (The document text is accessed by clicking on the blue-colored document name).

News

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Environment and Pharmaceuticals

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Document	Substance	Risk	PBT
Ethinylestradiol	ethinylestradiol b...	High	9

Environment and Pharmaceuticals

All ▼ Search ATC-group Search help

	Risk	PBT	P	B	T
Ethinylestradiol	High	9	3	3	3

Preparations: Abelonelle 28, Amorest 28, Anastrella 28, Belara, [Show all](#)

Information

Ethinylestradiol is on the EU list of substances whose concentrations in surface waters should be monitored in the Member States for environmental reasons. Affects fish fertility even at concentrations as low as 1 ng / L - concentrations found in Swedish, treated municipal wastewater.

Ethinylestradiol is included in the Stockholm County Council's table of pharmaceuticals with a negative environmental impact according to the environmental programme 2017-2021.

Ethinylestradiol is recommended in The Wise List 2017.

The risk classification (Fass.se) is based on total sold amount (kg) of the substance in Sweden during the year 2011.

Last updated 2017-06-14.

References

- 1 Kidd KA, Blanchfield PJ, Mills KH, Palace VP, Evans RE, Lazorchak JM et al. Collapse of a fish population after exposure to a synthetic estrogen. Proc Natl Acad Sci U S A. 2007;104:8897-901. [PubMed](#)

Environment and Pharmaceuticals

[ATC-group](#)
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Document	ATC-Kod	Risk	PBT
Evolocumab	C10AX13	Exempt	
Alirocumab	C10AX14	Exempt	
Atorvastatin	C10AA05 C10BA05	Insignificant	4
Bezafibrate	C10AB02	Insignificant	5
Cholestyramine	C10AC01	Cannot be excluded	6*
Colestipol	C10AC02	Cannot be excluded	
Ezetimibe	C10AX09 C10BA02 C10BA05	Insignificant	6
Fenofibrate	C10AB05	Insignificant	3
Fluvastatin	C10AA04	Insignificant	4
Gemfibrozil	C10AB04	Low	5
Pravastatin	C10AA03	Insignificant	4
Rosuvastatin	C10AA07	Insignificant	1
Simvastatin	C10AA01 C10BA02	Low	4

Instructions for the Wise List 2017

... If the medical effects and safety are comparable, the drug with the most favourable total cost and with the lowest environmental impact should be recommended ...

... A substance with a small or moderate impact on the environment should be recommended before a substance lacking environmental information ...

... When possible also take other environmental effects into account like reduction in wastewater treatment plants, environmental effects by manufacturing ...



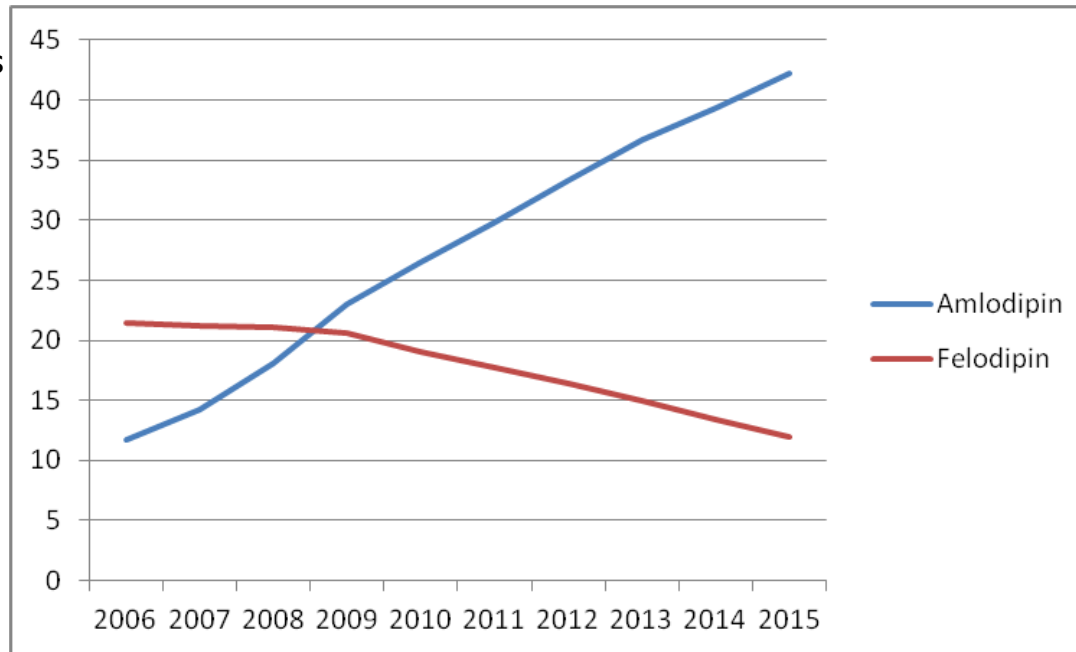
Other Environmental Aspects

- Pharmaceutical formulation
- Packaging
- Starter packs in the reimbursement system?



Changing from Felodipine to Amlodipine

Patients per
1 000 inhabitants



Changing from Diclofenac to Naproxene

Patients per
1 000 inhabitants

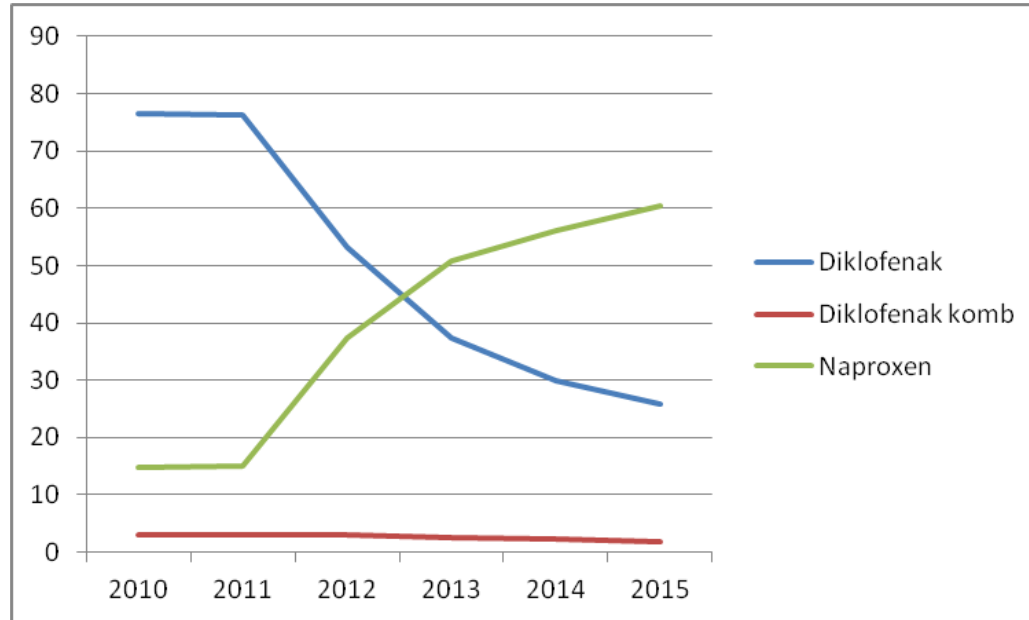
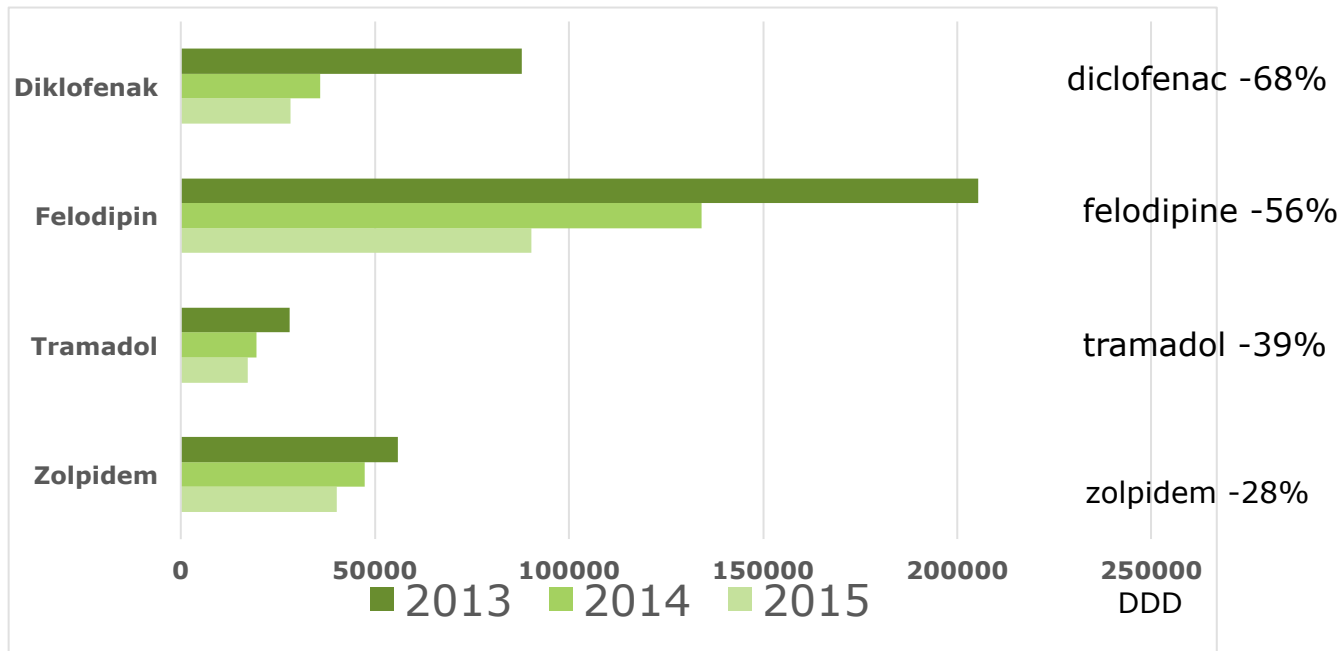


Table of Pharmaceuticals with Negative Environmental Impact — Stockholm County Council

Substance	Substance
amoxicillin	glibenclamide
azithromycin	haloperidol
ciprofloxacin	irbesartan
citalopram	levonorgestrel
clarithromycin	meclozine
diazepam	oxazepam
diclofenac	risperidone
erythromycin	roxithromycin
ethinylestradiol	sertraline
estradiol	tetracycline
felodipine	trimethoprim
fluoxetine	venlafaxine
flupentixol	

Environmental Goals for Danderyd University Hospital



Upstream Work is still Important

- Not all wastewater treatment plants will be upgraded
- Some cities and villages will be without modern technique
- There are many individual wastewater plants in Sweden



Photo: iStock/robax

Thank you for listening!

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