

**The EURO-FORTA (Fit fOR The Aged) List Version 2: Consensus Validation of a Clinical Tool for Improved Pharmacotherapy in Older Adults**

Drugs & Aging

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**The EURO - FORTA list Version 2**  
“Fit fOR The Aged“  
**Expert Consensus Validation**



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## **Disclaimer**

While building on an international foundation of medical evidence and experience for the medications listed, including already existing “negative lists” and classification systems, this FORTA List primarily reflects prescribing tendencies in seven European countries/regions. The FORTA labels themselves, being evidence-based, may possibly be subject to change during the course of further consensus evaluation procedures, depending on the state of evidence and clinical experience for a given substance<sup>5</sup>. Meanwhile, the FORTA principle has been validated in a randomized clinical trial (VALFORTA) showing a large improvement of medication quality and amelioration of clinical parameters<sup>6</sup>.

With the goal of creating a user-friendly clinical tool, a summary of relevant comments is given directly in the EURO-FORTA List, drawing on the Delphi experts’ extensive clinical experience. This is however by no means comprehensive and does not necessarily refer to specific evidence or sources. Therefore, the authors’ selection of suggestions, comments and warnings may be subjective<sup>5</sup>. ‘No comment’ reflects the absence of noteworthy or relevant words of information or caution within the context of the expert evaluation. All information herein is believed to be true and accurate. Neither the authors nor the University of Heidelberg or affiliated institutions, as the publishers of this list, can accept legal responsibility for any errors or omissions made in the contents of this list<sup>5</sup>.

We welcome all comments and criticism which may contribute to the quality, safety and usability of the EURO-FORTA List in daily clinical practice.

# **The FORTA Concept: expert panel for the FORTA classification system**

## **FORTA Expert Review Panel**

The following 48 colleagues, representing seven European countries/regions, provided their expertise for purposes of evaluating the proposed FORTA List. They received no honoraria in connection with this project. All panel members contributed actively to the development of the content of the EURO-FORTA List.

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## F O R T A – Physician's guide<sup>1,2,5,7</sup>

1. FORTA is evidence-based + real-life-oriented (factors such as compliance issues, age-dependent tolerance and frequency of relative contraindications are considered).
2. Classifications are indication (or diagnosis)-dependent: a medication can receive different FORTA classifications based on differing indications.
3. Contraindications always take precedence over the FORTA-classification (for example, even Class A medications may not be given if allergies are present).
4. FORTA is designed to be a quick and user-friendly clinical tool to aid in the pharmacotherapy of older patients\*. The system is not intended to take the place of individual therapeutic considerations or decisions. As with any simplified model, it does allow for exceptions.

## F O R T A – Classification System A-D<sup>1,2,3,4,7</sup>

Class A = Indispensable drug, clear-cut benefit in terms of efficacy/safety ratio proven in elderly patients for a given indication	Class B = Drugs with proven or obvious efficacy in the elderly, but limited extent of effect and/or safety concerns	Class C = Drugs with questionable efficacy/safety profiles in the elderly which should be avoided or omitted in the presence of too many drugs, absence of benefits or emerging side effects; explore alternatives	Class D = Avoid if at all possible in the elderly, omit first and use alternative substances
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\* FORTA aims at older patients, has been validated primarily for patients 65 years of age or older with significant comorbidities (3 or more diagnoses and drugs) and should be used in all patients 80 years of age or older will. These target groups are mostly defined as geriatric patients.

# The EURO-FORTA List<sup>3,4,5</sup>

## Delphi Expert Consensus Validation

F O R T A			
A	B	C	D

Classification of the most frequently used long-term medications†

for the pharmacotherapy of older patients

by indication/diagnosis, ranked according to FORTA classification

Newly proposed drugs are mentioned under the respective diagnosis and marked by \*; they are listed in greater detail in the second part.

(† long-term defined as > 4 weeks. Please note that the distinction between acute/chronic may not always be clear-cut; exceptions are noted)

ARTERIAL HYPERTENSION	Suggested FORTA class (2018) <sup>8</sup> ; if different marked with *	Netherlands (N=4)	Italy (N=5)	Nordic countries (N=4)	Spain (N=4)	Poland (N=7)	UK/Ireland (N=4)	Germany /Austria/Switzerland <sup>9</sup> (N=20)	Mean consensus coefficient	EURO-FORTA Class (Original FORTA class in parentheses if different from consensus results)
		FORTA class / Consensus coefficient								
Substance/Group										
Renin-Angiotensin system inhibitors ACE inhibitors	A	A 1.000	1.000	A						
	A	A 1.000	A 1.000	A 0.875	A 1.000	A 1.000	A 1.000	A 1.000	0.982	A
Long-acting calcium antagonists, dihydropyridine type, for example amlodipine	A	A 1.000	A 0.900	A 1.000	0.986	A				
Beta-blockers except atenolol	C*	C 0.875	C 0.900	B 0.667	C 0.875	C 0.857	C 1.000	C 0.895	0.867	C
Atenolol	D*	D 0.750	D 0.900	D 0.667	D 0.875	D 1.000	C 0.750	D 1.000	0.849	D
Diuretics except indapamid	B	B 1.000	B 0.800	B 0.875	B 0.833	B 1.000	B 1.000	B 0.972	0.926	B
Indapamid	A*	B 0.750	A 0.900	A 0.833	A 1.000	A 1.000	B 0.625	A 0.833	0.849	A

<b>Alpha blockers</b>	C	C 0.875	C 0.900	C 1.000	C 1.000	C 0.833	C 1.000	C 0.974	0.940	C
<b>Spironolactone</b>	C	C 0.875	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 0.972	0.978	C
<b>Moxonidine</b>	C	C 0.750	C 0.875	C 0.833	C 1.000	C 0.917	C 1.000	C 1.000	0.911	C
<b>Aliskiren</b>	C	C 1.000	C 1.000	C -	C 1.000	C 0.900	C 1.000	C 0.971	0.978	C
<b>Urapidil</b>	C	C 0.833	C 1.000	-	C 1.000	C 1.000	C 1.000	C 1.000	0.972	C
<b>Clonidine</b>	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 0.972	0.996	D
<b>Minoxidil</b>	D	D 1.000	D 1.000	D 0.500	D 1.000	D 1.000	D 1.000	D 1.000	0.929	D
<b>Calcium antagonists, verapamil type</b>	D	D 1.000	D 1.000	D 1.000	D 1.000	C 0.857	D 1.000	D 1.000	0.980	D
<b>CARDIAC INSUFFICIENCY</b>	<b>Suggested FORTA class (2018); if different marked with *</b>	Netherland s (N=4)  FORTA class / Consensus coefficient	Italy (N=5)  FORTA class / Consensus coefficient	Nordic countries (N=4)  FORTA class / Consensus coefficient	Spain (N=4)  FORTA class / Consensus coefficient	Poland (N=7)  FORTA class / Consensus coefficient	UK/Ireland (N=4)  FORTA class / Consensus coefficient	Germany /Austria/S witzerland <sup>9</sup> (N=20)  FORTA class / Consensus coefficient	<b>Mean consensus coefficient</b>	<b>EURO-FORTA Class</b>  (Original FORTA class in parentheses if different from consensus results)
<b>Substance/Group</b>										

Renin-angiotensin system inhibitors ACE inhibitors	A	A 1.000	1.000	A						
	A	A 1.000	1.000	A						
Angiotensin receptor antagonists	A	A 1.000								
Betablockers (metoprolol, carvedilol, bisoprolol)	A	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 0.974	0.996	A
Diuretics	B	A 0.625	A 1.000	A 0.875	A 1.000	A 1.000	B 1.000	B 0.921	0.917	(B) A
Gliflozins (SGLT2 inhibitors) only those substances which have been approved for this indication (dapagliflozine)	B	B 1.000	B 0.900	B 1.000	B 0.875	B 0.917	B 0.875	B 0.971	0.934	B
Spironolactone	B	B 1.000	B 0.800	C 1.000	B 1.000	B 1.000	B 1.000	C 0.947	0.964	B
Digitalis preparations	C	C 1.000	C 0.900	C 1.000	C 0.875	C 1.000	C 1.000	C 0.947	0.960	C
Ivabradine	C	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 0.972	0.996	C
Iron substitution in patients with iron deficiency	A	A 1.000	A 1.000	A 0.875	A 1.000	A 0.929	A 1.000	A 0.895	0.957	A

ACUTE CORONARY SYNDROME	Suggested FORTA class (2018); if different marked with *	Netherlands (N=4)	Italy (N=5)	Nordic countries (N=4)	Spain (N=4)	Poland (N=7)	UK/Ireland (N=4)	Germany /Austria/Switzerland <sup>5</sup> (N=20)	Mean consensus coefficient	EURO-FORTA Class (original FORTA class in parentheses if different from consensus results)
		FORTA class / Consensus coefficient								
<b>Substance/Group</b>										
Renin-Angiotensin-System- Blocker: ACE inhibitors	A	A 1.000	1.000	A						
Acetylsalicylic acid	A	A 1.000	1.000	A						
Unfractionated heparin and low molecular weight heparin	A	A 0.750	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	0.964	A
Frequency-lowering betablockers , e.g. metoprolol or bisoprolol	A	A 1.000	1.000	A						
Atorvastatin	A	A 1.000	1.000	A						
Nitroglycerin spray, single use, acute as on-demand medication	A	A 1.000	A 1.000	A 1.000	A 1.000	A 0.929	A 1.000	A 0.947	0.982	A
Clopidogrel, prasugrel	B	B 0.875	B 1.000	B 1.000	B 1.000	B 1.000	A 1.000	A 1.000	0.982	B

	A for stent	A for stent 1.000	A for stent 1.000	A for stent 1.000	A for stent 1.000	A for stent 0.857	A for stent 1.000		0.976	A for stent
Thrombolytics, especially rTPA (recombinant tissue-type plasminogen activator)	B	C 1.000	B 0.833	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	0.976	B
Nitrates, long-term	C	B 1.000	C 1.000	C 1.000	C 1.000	C 0.917	C 1.000	C 0.947	0.981	C
Gp IIb/IIIa antagonists (glycoprotein 2b/3a inhibitors)	C	B 0.875	C 1.000	C 1.000	C 1.000	C 0.917	C 0.875	C 1.000	0.952	C
Ivabradine	C	B 0.750	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	0.964	C
CHRONIC THERAPY FOLLOWING MYOCARDIAL INFARCTION	Suggested FORTA class (2018); if different marked with *	Netherland s (N=4)  FORTA class / Consensus coefficient	Italy (N=5)  FORTA class / Consensus coefficient	Nordic countries (N=4)  FORTA class / Consensus coefficient	Spain (N=4)  FORTA class / Consensus coefficient	Poland (N=7)  FORTA class / Consensus coefficient	UK/Ireland (N=4)  FORTA class / Consensus coefficient	Germany /Austria/Switzerland <sup>9</sup> (N=20)  FORTA class / Consensus coefficient	Mean consensus coefficient	EURO-FORTA Class  (original FORTA class in parentheses if different from consensus results)
Substance/group										
Renin angiotensin system blockers ACE Inhibitors	A	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	1.000	A
Acetylsalicylic acid (100 mg/d)	A	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	1.000	A

Frequency-lowering beta blockers up to 3 years	A	A 1.000	1.000	A						
Frequency-lowering beta blockers longer than 3 years	C	C 0.833	C 1.000	C 1.000	C 1.000	B 0.786	B 1.000	C 0.917	0.934	C
Nitroglycerin spray, single use as on- demand medication	A	A 1.000	A 1.000	A 1.000	A 1.000	A 0.929	A 1.000	A 0.921	0.979	A
Influenza vaccination (inactivated subunit vaccines)/pneumococ- cal immunizations	See Vaccinati- ons	-	-	-	-	-	-	-	-	-
Statins	A	A 1.000	A 1.000	A 1.000	A 1.000	A 0.917	A 1.000	A 1.000	0.988	A
	B for very old (>85 years) patients	B 0.875	B 0.800	B 0.875	B 1.000	B 0.875	B 1.000	B 0.895	0.903	B for very old patients
Clopidogrel (12 months after acute coronary syndrome)	A with aspirin intoleran- ce	A 1.000	1.000	A with aspirin intolerance						
Nitrates, long-term	C	C 1.000	C 0.875	C 1.000	C 0.875	C 0.857	C 1.000	C 0.947	0.936	C
Fibrates	C	C 0.875	C 0.875	C 1.000	C 1.000	C 0.929	C 1.000	C 0.921	0.943	C
Ezetimibe	C	C 0.875	C 1.000	C 1.000	C 1.000	C 0.929	C 1.000	B 1.000	0.972	C
Amiodarone	C	D 1.000	C 0.875	C 1.000	C 1.000	C 1.000	C 1.000	C 0.972	0.978	C
All other class-I/III antiarrhythmic agents	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 0.875	D 1.000	0.982	D

Dihydropyridine antagonists (if no hypertension)	D	D 0.875	D 1.000	D 0.875	D 1.000	D 1.000	D 0.875	D 1.000	0.946	D
Niacin	D	D 1.000	D 1.000	D 0.500	D 1.000	D 1.000	D 1.000	D 1.000	0.929	D

STROKE	Suggested FORTA class (2018); if different marked with *	Netherlands (N=4) FORTA class / Consensus coefficient	Italy (N=5) FORTA class / Consensus coefficient	Nordic countries (N=4) FORTA class / Consensus coefficient	Spain (N=4) FORTA class / Consensus coefficient	Poland (N=7) FORTA class / Consensus coefficient	UK/Ireland (N=4) FORTA class / Consensus coefficient	Germany /Austria/Switzerland <sup>9</sup> (N=20) FORTA class / Consensus coefficient	Mean consensus coefficient	EURO-FORTA Class (original FORTA class in parentheses if different from consensus results)
<b>Substance/Group</b>										
Acetylsalicylic acid	A 0.750	B 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	0.964	A
Atorvastatin	A 0.875	A 1.000	A 0.875	A 0.875	A 0.875	A 1.000	B 1.000	A 1.000	0.938	A
rTPA (recombinant tissue-type plasminogen activator); only for emergency use	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	1.000	A
Simvastatin	A 0.875	A 1.000	A 0.875	A 0.875	A 0.875	B 0.714	A 0.875	A 1.000	0.869	A
Anticoagulants including new oral anticoagulants	A 0.875	B 1.000	A 1.000	A 0.875	A 1.000	A 1.000	A 1.000	-	0.958	A

Clopidogrel	A	A 0.625	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	0.946	A
Dipyridamole plus acetylsalicylic acid	B	B 1.000	B 1.000	B 1.000	B 0.875	B 1.000	C 1.000	C 0.947	0.975	B

ATRIAL FIBRILLATION	Suggested FORTA class (2018); if different marked with *	Netherlands (N=4) FORTA class / Consensus coefficient	Italy (N=5) FORTA class / Consensus coefficient	Nordic countries (N=4) FORTA class / Consensus coefficient	Spain (N=4) FORTA class / Consensus coefficient	Poland (N=7) FORTA class / Consensus coefficient	UK/Ireland (N=4) FORTA class / Consensus coefficient	Germany /Austria/Switzerland <sup>9</sup> (N=20) FORTA class / Consensus coefficient	Mean consensus coefficient	EURO-FORTA Class (original FORTA class in parentheses if different from consensus results)
Substance/group										
Frequency-lowering betablockers	A	A 0.875	A 0.900	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	0.968	A
New Oral Anticoagulants (NOACs)  Except dabigatran	B	A 0.750	A 0.700	B 0.833	B 0.750	A 0.714	B 1.000	B 0.895 (Apixaban FORTA A)	0.806	B
	C	C 0.667	C 0.900	B 0.500	C 1.000	C 0.900	C 0.875	B 0.895	0.732	C
Oral anticoagulation by vitamin-K-	B	B 0.875	B 0.900	B 0.750	B 0.875	B 0.929	B 1.000	B 0.972	0.900	B

antagonists (e.g. phenprocoumon, warfarin)  Alternative: low molecular weight heparin								(Phenprocoumon C)		
	C	C 0.875	C 1.000	C 1.000	C 0.875	C 1.000	C 1.000	C 1.000	0.964	C
Digoxin	B 0.750	B 0.800	C 1.000	B 1.000	B 0.714	B 0.875	C 0.944	0.869	B	
Digitoxin	C 0.833	C 0.875	C 1.000	C 1.000	C 0.700	C 0.875	C 0.944	0.890	C	
Diltiazem, verapamil	C 1.000	C 1.000	C 0.667	C 1.000	C 0.929	C 1.000	D 1.000	0.942	C	
Class III antiarrhythmic agent amiodarone	C 1.000	C 0.800	C 1.000	C 1.000	C 0.857	C 1.000	C 0.947	0.943	C	
All other class I or III antiarrhythmic agents	D 0.875	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	0.983	D	
Acetylsalicylic acid (100 mg/d)	D 1.000	D 0.800	C 1.000	D 0.667	C 0.917	D 1.000	D 1.000	0.912	D	
Class III antiarrhythmic agent dronedarone	D 0.833	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	0.976	D	

0.957										
CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)	Suggested FORTA class (2018); if different marked with *	Netherlands (N=4)	Italy (N=5)	Nordic countries (N=4)	Spain (N=4)	Poland (N=7)	UK/Ireland (N=4)	Germany /Austria/Switzerland <sup>9</sup> (N=20)	Mean consensus coefficient	EURO-FORTA Class (original FORTA class in parentheses if different from consensus results)
		FORTA class / Consensus coefficient								
Substance/group										
Inhalative long-acting parasympatholytic agents	A	A 1.000	A 1.000	A 0.875	A 1.000	A 1.000	A 0.875	A 1.000	0.964	A
Systemic glucocorticoids, acute, short-term use in cases of exacerbation	A	A 1.000	A 1.000	A 0.875	A 1.000	A 0.833	A 1.000	A 0.972	0.954	A
Antibiotics (acute) in cases of exacerbation, after calculated selection and, if necessary, according to antibiogram	A	A 1.000	A 1.000	A 0.833	A 1.000	A 0.917	A 1.000	A 1.000	0.964	A
Long-term administration of oxygen	A	A 1.000	A 1.000	A 0.875	A 1.000	A 1.000	A 1.000	A 1.000	0.982	A
Annual influenza immunizations	See vaccinations	-	-	-	-	-	-	-	-	-

Pneumococcal immunizations for persons ≥ 65 years	See Vaccinations	-	-	-	-	-	-	-	-	-	-
Inhalative beta 2 mimetic agents	B	B 0.750	B 1.000	B 0.833	B 1.000	B 0.917	B 1.000	B 0.912	0.916	B	
Inhalative glucocorticoids	C	C 0.875	C 0.800	B 0.667	C 0.875	B 0.917	C 1.000	C 0.917	0.864	C	
Theophylline	D*	D 1.000	D 0.875	D 1.000	D 1.000	D 0.833	D 1.000	D 1.000	0.958	D	
Mucolytic agents, e.g., acetyl cysteine, bromhexine	C	D 1.000	C 0.900	C 1.000	C 1.000	C 0.917	C 0.875	C 0.972	0.952	C	
Roflumilast	C	C 0.750	C 1.000	C 1.000	C 0.875	C 1.000	C 1.000	C 1.000	0.946	C	
Systemic glucocorticoids, chronic use	D	D 1.000	D 1.000	D 1.000	D 1.000	D 0.900	D 1.000	D 1.000	0.986	D	
Antitussives: opioid A., e.g. codein; non-opioid A., e.g. butamirate	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 0.875	D 1.000	0.982	D	
OSTEOPOROSIS	Suggested FORTA class	Netherlands (N=4)  FORTA class / Consensus coefficient	Italy (N=5)  FORTA class / Consensus coefficient	Nordic countries (N=4)  FORTA class / Consensus coefficient	Spain (N=4)  FORTA class / Consensus coefficient	Poland (N=7)  FORTA class / Consensus coefficient	UK/Ireland (N=4)  FORTA class / Consensus coefficient	Germany /Austria/Switzerland <sup>9</sup> (N=20)  FORTA class / Consensus	Mean consensus coefficient	EURO-FORTA Class  (original FORTA class in parentheses if different from consensus results)	

	(2018); if different marked with *							coefficient		
Substance/Group										
Calcium and vitamin D supplements (as prophylaxis for persons ≥65 years)	A	B 0.750	A 1.000	A 1.000	A 0.875	A 1.000	A 1.000	A 0.921	0.935	A
Parenteral bisphosphonates (e.g. ibandronate, IV every 3 months)	A	A 1.000	B 0.667	A 0.750	B 1.000	B 1.000	A 0.875	A 1.000	0.899	A
Denosumab	A	B 0.875	B 0.800	B 1.000	B 1.000	B 1.000	A 1.000	A 0.972	0.950	(A) B
Raloxifene for women	B	B 0.875	C 0.800	B 0.750	B 0.875	B 1.000	B 1.000	A 1.000	0.900	B
Bisphosphonates, oral	B	B 0.750	B 0.900	A 0.750	B 0.875	B 1.000	B 1.000	B 0.947	0.889	B
Teriparatide	C	C 0.750	B 1.000	C 0.833	C 0.875	C 1.000	C 1.000	C 0.941	0.914	C
Alfacalcidol	C	C 1.000	C 0.900	C 1.000	C 1.000	C 0.833	C 1.000	C 1.000	0.962	C
Parathormone	C	C 0.875	C 1.000	C 1.000	C 1.000	C 1.000	C 0.875	C 1.000	0.964	C
Strontium ranelate	D	D 0.875	D 1.000	D 0.750	D 1.000	D 1.000	D 1.000	D 1.000	0.946	D
Nandrolone decanoate	D	D 1.000	1.000	D						
Fluoride	D	D 1.000	1.000	D						

Hormone replacement therapy (HRT): estrogen, except for perimenopausal)	D	D 0.875	D 1.000	D 0.833	D 1.000	D 1.000	D 0.875	D 0.911	0.928	D
TYPE II DIABETES MELLITUS	Suggested FORTA class (2018); if different marked with *	Netherlands (N=4)  FORTA class / Consensus coefficient	Italy (N=5)  FORTA class / Consensus coefficient	Nordic countries (N=4)  FORTA class / Consensus coefficient	Spain (N=4)  FORTA class / Consensus coefficient	Poland (N=7)  FORTA class / Consensus coefficient	UK/Ireland (N=4)  FORTA class / Consensus coefficient	Germany /Austria/Switzerland <sup>9</sup> (N=20)  FORTA class / Consensus coefficient	Mean consensus coefficient	EURO-FORTA Class  (original FORTA class in parentheses if different from consensus results)
Substance/group										
DPP4 (Dipeptidylpeptidase ) Inhibitors	B	B 1.000	A 1.000	B 1.000	A 1.000	B 1.000	B 1.000	A 0.921	0.989	B
Insulin and insulin analogs (if absolutely necessary)	B	B 0.875	B 0.800	A 0.875	A 0.625	B 0.857	B 1.000	B 0.868	0.843	B
Metformin	B	A 0.750	A 1.000	B 0.750	A 0.875	A 0.929	B 1.000	B 0.868	0.882	(B) A
GLP1 (Glucagon-Like Peptide-1) analogs	B	C 0.875	B 1.000	B 1.000	B 1.000	B 1.000	B 0.875	B 0.947	0.957	B
Acarbose	B	C 0.875	B 0.900	B 1.000	C 0.750	B 0.857	C 1.000	C 0.894	0.897	(B) C
3rd generation sulfonylureas (for example,	C	B 1.000	C 0.900	C 0.833	C 0.875	B 0.929	C 1.000	C 0.947	0.926	C

glimepiride)										
Glinides (for example, nateglinide)	C	C 1.000	C 0.900	C 1.000	C 1.000	C 1.000	C 1.000	C 0.974	0.982	C
PPAR-γ Ligands (Peroxisomal Proliferator-Activated Receptor gamma)	C	C 0.875	C 0.900	C 1.000	C 1.000	C 1.000	C 1.000	C 0.944	0.960	C
Pioglitazone	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	1.000	D
Rosiglitazone	D	B 0.333	B 0.500	D 1.000	C 0.625	B 0.600	C 1.000	C 0.806	0.695	(D) C
Gliflozins (SGLT-2 inhibitors)	D	C 0.875	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	0.982	D
1st generation sulfonylureas (for example, glibenclamide)	D									
DEMENTIA	Suggested FORTA class (2018); if different marked with *	Netherlands (N=4)  FORTA class / Consensus coefficient	Italy (N=5)  FORTA class / Consensus coefficient	Nordic countries (N=4)  FORTA class / Consensus coefficient	Spain (N=4)  FORTA class / Consensus coefficient	Poland (N=7)  FORTA class / Consensus coefficient	UK/Ireland (N=4)  FORTA class / Consensus coefficient	Germany /Austria/Switzerland <sup>9</sup> (N=20)  FORTA class / Consensus coefficient	Mean consensus coefficient	EURO-FORTA Class  (original FORTA class in parentheses if different from consensus results)
Substance/group										

Acetylcholinesterase inhibitors e.g. donepezil, galantamine, rivastigmine (Only if indicated for the present stage of the disease)	B	C 0.750	B 0.900	B 0.833	B 0.875	B 0.857	B 1.000	B 0.895	0.873	B
Memantine	C	C 0.875	C 0.800	B 0.625	C 0.875	B 0.929	C 1.000	B 0.947	0.864	C
Ginkgo biloba	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	C 0.875	0.982	D
Statins	D	D 1.000	D 1.000	D 0.833	D 1.000	D 0.929	C 1.000	D 1.000	0.966	D
Selegiline	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	-	1.000	D
Nimodipine	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	-	1.000	D
Ergoline derivatives	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	-	1.000	D
Piracetam	D	D 1.000	1.000	D						
Pyritinol	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	-	1.000	D
Antioxidants: Vitamin E, selenium, vitamin C	D	D 1.000	1.000	D						
Phytotherapeutic agents, e.g. ginseng	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	-	1.000	D
Hormone preparations, e.g. DHEA (Dehydroepiandrosterone), testosterone	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 0.975	0.996	D
Antiphlogistics, e.g. indomethacin	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	-	1.000	D
Desferrioxamine	D	D	D	D	D	D	D	-	1.000	D

		1.000	1.000	1.000	1.000	1.000	1.000			
<b>BEHAVIORAL AND PSYCHOLOGICAL SYMPTOMS OF DEMENTIA (BPSD)</b>	<b>Suggested FORTA class (2018); if different marked with *</b>	Netherland s (N=4)	Italy (N=5)	Nordic countries (N=4)	Spain (N=4)	Poland (N=7)	UK/Ireland (N=4)	Germany /Austria/S witzerland <sup>9</sup> (N=20)	<b>Mean consensus coefficient</b>	<b>EURO-FORTA Class</b> (original FORTA class in parentheses if different from consensus results)
<b>DEPRESSION</b>										
<b>Substance/group</b>										
<b>SSRI (Selective Serotonin Reuptake Inhibitors) Citalopram/escitalopram, sertraline, fluoxetine in the usual dosages</b>	C	C 0.750	C 1.000	C 0.750	C 1.000	B 0.917	C 1.000	C 0.900	0.902	C
<b>Mirtazapine (15-45mg/d)</b>	C	C 0.750	C 1.000	C 0.750	C 1.000	C 1.000	C 1.000	C 0.925	0.918	C
<b>SNRI (Serotonin-Noradrenalin-Reuptake-Inhibitors) Venlafaxine, duloxetine</b>	C	D 0.750	C 1.000	C 0.750	C 1.000	C 0.929	C 1.000	D 0.875	0.901	C

BPSD: PARANOIA, HALLUCINATION	Suggested FORTA class (2018); if different marked with *	Netherland s (N=4)	Italy (N=5)	Nordic countries (N=4)	Spain (N=4)	Poland (N=7)	UK/Ireland (N=4)	Germany /Austria/S witzerland <sup>9</sup> (N=20)	Mean consensus coefficient	EURO- FORTA Class (original FORTA class in parentheses if different from consensus results)
<b>Substance/group</b>										
Risperidone (initially 0,5-1 mg/d)	C	B 0.750	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 0.850	0.943	C
Melperone (25- 150mg/d)	C	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 0.917	0.988	C
Quetiapine (25-200 mg/d)	C	C 0.875	C 1.000	C 1.000	C 1.000	B 1.000	C 1.000	C 0.921	0.971	C
Aripiprazole (2-15 mg/d)	D	C 0.875	C 1.000	C 1.000	D 1.000	D 1.000	C 1.000	D 0.895	0.967	(D) C
Haloperidol (initially 0.5 mg/d, max. 3 mg/d)	C	C 1.000	C 1.000	C 1.000	D 0.750	C 0.786	C 1.000	D 0.921	0.922	C
Clozapine (10-50 mg/d)	D	C 0.625	D 0.900	D 1.000	D 1.000	D 1.000	D 1.000	D 0.950	0.925	D

BPSD: RESTLESSNESS, AGITATION, (AGGRESSIONESS)	Suggested FORTA class (2018); if different marked with *	Netherland s (N=4)	Italy (N=5)	Nordic countries (N=4)	Spain (N=4)	Poland (N=7)	UK/Ireland (N=4)	Germany /Austria/S witzerland <sup>9</sup> (N=20)	Mean consensus coefficient	EURO- FORTA Class (original FORTA class in parentheses if different from consensus results)
		FORTA class / Consensus coefficient								
<b>Substance/group</b>										
Trazodone (50-200 mg/d)	C 0.875	C 1.000	C 1.000	C 1.000	C 1.000	C 0.929	C 0.875	C 0.895	0.939	C
Risperidone (initially 0,5-1 mg/d, Maximum 3 mg/d)	C 0.875	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 0.900	0.968	C
Quetiapine (25-200 mg/d)	C 0.875	C 0.900	C 1.000	C 1.000	B 1.000	C 1.000	C 1.000	C 0.921	0.957	C
Melperone (25-150 mg/d)	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 0.972	0.996	C
Citalopram (10- 30mg)	C 0.875	D 0.900	C 1.000	C 1.000	C 1.000	C 1.000	C 0.875	C 0.861	0.930	C
Clomethiazole (5-15 mg/d)	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 0.944	0.992	D
Pipamperone (20-120 mg/d)	D 0.875	D 1.000	-	D 1.000	D 0.917	D 1.000	C 0.947	0.957	D	

BPSD: SLEEP DISORDERS	Suggested FORTA class (2018); if different marked with *	Netherlands (N=4)	Italy (N=5)	Nordic countries (N=4)	Spain (N=4)	Poland (N=7)	UK/Ireland (N=4)	Germany /Austria/Switzerland <sup>9</sup> (N=20)	Mean consensus coefficient	EURO-FORTA Class (original FORTA class in parentheses if different from consensus results)
		FORTA class / Consensus coefficient								
<b>Substance/group</b>										
Slow-release melatonin (2-4 mg)	C	D 1.000	C 1.000	C 0.833	C 1.000	C 0.857	C 1.000	C 0.944	0.948	C
Tetracyclic antidepressant Mirtazapine (15-30mg)	C	D 0.750	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 0.850	0.943	C
Tricyclic antidepressant Doxepine (25-50 mg)	C	D 1.000	C 1.000	C 1.000	D 0.750	D 0.929	C 0.875	D 1.000	0.936	D
Zopiclone (3,75-7,5 mg)	C	C 0.875	C 1.000	C 1.000	C 1.000	C 0.857	C 0.875	D 0.944	0.936	C
Zolpidem	C	-	D 1.000	C 1.000	-	C 0.786	-	-	0.929	C
<b>DEPRESSION Prophylaxis and therapy for patients with moderate to major depression</b>		Netherlands (N=4)	Italy (N=5)	Nordic countries (N=4)	Spain (N=4)	Poland (N=7)	UK/Ireland (N=4)	Germany /Austria/Switzerland <sup>9</sup> (N=20)	Mean consensus coefficient	EURO-FORTA Class (original FORTA class in parentheses if different from

	Suggested FORTA class (2018); if different marked with *	coefficient	coefficient	coefficient	coefficient	coefficient	Consensus coefficient	class / Consensus coefficient		consensus results)
Substance/group										
SSRIs (Selective Serotonin Reuptake Inhibitor)	C 0.750	B 0.900	B 1.000	B 1.000	B 0.857	B 1.000	B 0.975	0.926	B	
Sertraline	B									
Escitalopram	B 0.625	B 0.900	B 1.000	B 1.000	B 0.929	B 1.000	B 0.975	0.918	B	
Citalopram	B 0.750	B 0.900	B 1.000	B 1.000	B 0.929	B 1.000	B 0.950	0.933	B	
Tricyclic antidepressant Nortriptyline	C 0.750	B 0.900	D 1.000	D 1.000	D 1.000	C 1.000	C 0.850	0.929	C	
Tetracyclic antidepressant Mirtazapine	C 0.875	C 0.900	C 0.750	C 1.000	C 1.000	B 1.000	C 0.972	0.928	C	
SNRIs (Serotonin-Noradrenalin Reuptake Inhibitors)	C 0.875	C 0.875	C 0.750	C 1.000	C 0.857	C 0.875	C 0.950	0.883	C	
Venlafaxine	C									
Duloxetine	C 0.875	C 0.875	C 0.833	C 1.000	C 0.857	C 0.875	C 0.950	0.895	C	
Monoamine oxidase A (MAO) inhibitor Moclobemide	D* 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 0.975	0.996	D	
Dopamine and norepinephrine reuptake inhibitor Bupropion	C 0.875	C 1.000	C 1.000	C 1.000	C 0.929	C 1.000	C 0.950	0.965	C	

Vortioxetine	C	C 0.750	C 0.800	C 1.000	C 0.875	C 0.917	C 0.750	-	0.849	C
Trazodone	C	C 0.875	C 0.900	-	C 1.000	C 0.857	C 0.750	D 0.900	0.880	C
Olanzapine	C	D 0.750	C 1.000	C 1.000	C 0.875	C 1.000	D 0.875	-	0.917	C
Quetiapine	C	C 0.875	C 1.000	D 1.000	D 0.750	C 1.000	D 0.875	C 0.900	0.914	C
Benzodiazepines: General	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	1.000	D
Long-acting,	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	1.000	D
Short-acting	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	C 0.950	0.993	D
St. John's Wort	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 0.972	0.996	D
Agomelatine	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 0.950	0.993	D
Selective noradrenaline re- uptake inhibitor Reboxetine	D	D 1.000	D 1.000	D 1.000	D 0.875	D 0.857	D 1.000	D 1.000	0.962	D
<hr/>										
<b>BIPOLAR DISORDER</b>	<b>Suggested FORTA class (2018); if different</b>	Netherland s (N=4)	Italy (N=5)	Nordic countries (N=4)	Spain (N=4)	Poland (N=7)	UK/Ireland (N=4)	Germany /Austria/S witzerland <sup>9</sup> (N=20)	<b>Mean consensus coefficient</b>	<b>EURO- FORTA Class (original FORTA class in parentheses if different from consensus results)</b>

	marked with *										0.957
<b>Substance/group</b>											
Quetiapine	B	B 1.000	B 1.000	B 1.000	B 1.000	B 0.929	B 1.000	B 1.000	0.990	B	
Lithium	C	B 0.750	C 0.800	C 1.000	B 1.000	C 1.000	B 1.000	B 0.925	0.925	(C) B	
Valproic acid	C	B 0.875	C 0.900	C 1.000	C 1.000	C 1.000	C 1.000	C 0.925	0.957	C	
Lamotrigine	C	C 1.000	C 1.000	C 1.000	C 0.875	C 1.000	C 1.000	C 0.975	0.979	C	
Carbamazepine	D	D 1.000	D 1.000	D 1.000	D 1.000	C 1.000	D 1.000	D 1.000	1.000	D	
<b>INSOMNIA / SLEEP DISORDERS</b>	<b>Suggested FORTA class (2018); if different marked with *</b>	Netherlands (N=4)  FORTA class / Consensus coefficient	Italy (N=5)  FORTA class / Consensus coefficient	Nordic countries (N=4)  FORTA class / Consensus coefficient	Spain (N=4)  FORTA class / Consensus coefficient	Poland (N=7)  FORTA class / Consensus coefficient	UK/Ireland (N=4)  FORTA class / Consensus coefficient	Germany /Austria/Switzerland <sup>9</sup> (N=20)  FORTA class / Consensus coefficient	<b>Mean consensus coefficient</b>	<b>EURO-FORTA Class</b>  (original FORTA class in parentheses if different from consensus results)	
<b>Substance/group</b>											
Melatonin (slow-release)	B	C 0.875	B 1.000	C 0.833	B 0.875	B 1.000	B 0.875	B 0.894	0.907	B	

<b>ω1-Benzodiazepine agonists</b>		D 0.875	C 1.000	C 0.833	C 1.000	C 0.786	C 1.000	C 1.000	0.928	C
Zolpidem	C									
Zaleplone	C	C 0.833	C 1.000	C 0.750	C 1.000	C 0.857	C 1.000	C 1.000	0.920	C
<b>Non-benzodiazepine hypnotic Zopiclone</b>	C	D 0.875	C 1.000	C 0.833	C 1.000	C 0.857	C 1.000	C 0.975	0.934	C
<b>Butyrophenone derivative Pipamperone</b>	C	D 0.833	C 1.000	-	C 1.000	C 1.000	C 0.875	C 0.975	0.947	C
Melperone	C	D 0.750	C 1.000	-	C 1.000	C 1.000	C 0.875	C 0.974	0.933	C
<b>Tetracyclic antidepressant Mirtazapine</b>	C	D 1.000	C 1.000	C 0.833	C 1.000	C 1.000	C 0.875	C 0.925	0.948	C
<b>Tricyclic antidepressant Doxepine</b>	D	D 1.000	D 1.000	D 1.000	D 1.000	D 0.929	D 1.000	D 1.000	0.990	D
<b>Benzodiazepines, e.g. Oxazepam (medium half-life) Triazolam (very short half-life)</b>	D	D 1.000	D 0.900	C 1.000	D 0.875	D 1.000	D 1.000	D 0.950	0.961	D
	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 0.875	D 0.947	0.975	D
<b>Antihistamine Diphenhydramin</b>	D	D 1.000	D 1.000	D 1.000	D 1.000	D 0.917	D 1.000	D 1.000	0.988	D
<b>Sigma receptor agonist Opipramole</b>	D	D 1.000	D 1.000	-	D 1.000	D 1.000	D 1.000	D 0.975	0.996	D

CHRONIC PAIN	Suggested FORTA class (2018); if different marked with *	Netherlands (N=4)	Italy (N=5)	Nordic countries (N=4)	Spain (N=4)	Poland (N=7)	UK/Ireland (N=4)	Germany /Austria/Switzerland <sup>9</sup> (N=20)	Mean consensus coefficient	EURO-FORTA Class (original FORTA class in parentheses if different from consensus results)
		FORTA class / Consensus coefficient								
<b>Substance/group</b>										
Paracetamol (acetaminophen)	A	A 0.875	A 1.000	A 0.875	A 1.000	A 0.929	A 1.000	A 0.868	0.935	A
Opioids, e.g. Buprenorphine, oxycodone, hydromorphone	B	B 1.000	B 1.000	B 1.000	B 0.875	B 0.786	C 0.750	B 0.975	0.912	B
Primary use of a combination of an agonist and an antagonist, e.g. Tilidine/naloxone	C	C 0.833	C 0.875	C 1.000	C 1.000	C 1.000	C 1.000	C 0.974	0.955	C
Primary use of a combination of an agonist and an antagonist, e.g. Oxycodone/naloxone	C	C 0.875	B 1.000	C 1.000	C 1.000	C 1.000	C 0.875	C 0.974	0.961	C
Morphine	C	C 0.875	C 1.000	C 0.750	C 1.000	C 0.917	C 0.875	C 0.974	0.913	C

SSRI (Selective Serotonin Reuptake Inhibitors) / SNRI (Serotonin-Norepinephrine-Reuptake Inhibitor), e.g. venlafaxine (only if absolutely necessary)	C	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 0.974	0.996	C
Antiepileptic agents (only for neuropathic pain)	C	C 1.000	C 1.000	C 1.000	C 0.875	C 1.000	C 1.000	C 0.947	0.975	C
Pregabalin/gabapentin										
Carbamazepine	D	C 1.000	C 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 0.974	0.996	D
Metamizole	C	C 1.000	C 0.875	-	B 1.000	B 0.786	D 1.000	B 0.800	0.910	C
Tricyclic antidepressant amitriptyline (does not apply to doses up to 10mg per day)	D	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 0.875	D 1.000	0.982	D
NSAIDs (nonsteroidal anti-inflammatory drugs, for long-term use), e.g. naproxen	D	D 0.875	C 0.800	D 0.875	D 0.875	D 1.000	D 1.000	D 1.000	0.918	D
Cox-2 inhibitors, e.g. celecoxib	D	D 1.000	C 0.800	D 0.833	D 0.875	D 1.000	D 1.000	D 0.921	0.918	D

Tramadol	C	-	C 1.000	D 0.875	C 1.000	B 0.929	-	C 0.925	0.946	C
EPILEPSY	Suggested FORTA class (2018); if different marked with *	Netherland s (N=4)  FORTA class / Consensus coefficient	Italy (N=5)  FORTA class / Consensus coefficient	Nordic countries (N=4)  FORTA class / Consensus coefficient	Spain (N=4)  FORTA class / Consensus coefficient	Poland (N=7)  FORTA class / Consensus coefficient	UK/Ireland (N=4)  FORTA class / Consensus coefficient	Germany /Austria/S witzerland <sup>9</sup> (N=20)  FORTA class / Consensus coefficient	Mean consensus coefficient	EURO-FORTA Class  (original FORTA class in parentheses if different from consensus results)
Substance/group										
Levetiracetam	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	1.000	B
Lamotrigine	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	1.000	B
Gabapentin	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 0.875	B 0.911	0.969	B
Pregabalin	C 1.000	B 1.000	B 1.000	B 0.833	C 1.000	C 1.000	C 1.000	C 0.941	0.968	C
Lorazepam (emergency use)	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 0.929	B 1.000	B 0.971	0.986	B
Lorazepam (long-term use)	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 1.000	D 0.941	0.992	D
Topiramate	B 1.000	B 1.000	B 1.000	C 1.000	B 1.000	B 0.857	B 1.000	B 0.853	0.959	B
Valproic acid	C 1.000	B 1.000	C 1.000	C 0.750	C 0.875	C 1.000	C 0.875	C 0.971	0.924	C
Eslicarbazepine	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	1.000	C

Lacosamide	C C 1.000	C C 1.000	C C 1.000	C C 1.000	C C 0.875	C C 1.000	C C 1.000	B B 0.969	0.978	C
Zonisamide	C C 1.000	1.000	C							
Carbamazepine	C C 1.000	C C 1.000	C C 0.750	C C 0.750	C C 0.875	C C 1.000	C C 1.000	C C 0.971	0.942	C
Diazepam (emergency use)	C C 0.750	C C 1.000	B B 1.000	C C 1.000	C C 1.000	C C 1.000	C C 1.000	C C 0.971	0.960	C
Diazepam (long-term use)	D D 1.000	1.000	D							
Midazolam (emrgency use)	C C 0.875	B B 1.000	C C 1.000	C C 1.000	C C 1.000	C C 1.000	C C 0.875	C C 0.844	0.942	C
Midazolam (long-term use)	D D 1.000	D D 0.941	0.992	D						
Oxcarbazepine	C C 1.000	C C 1.000	D D 1.000	C C 1.000	C C 1.000	C C 1.000	C C 1.000	C C 1.000	1.000	C
Phenytoin	D D 1.000	D D 1.000	D D 0.875	D D 0.875	D D 1.000	D D 1.000	D D 0.875	D D 1.000	0.964	D
Phenobarbital	D D 1.000	1.000	D							
Ethosuximide	D D 1.000	1.000	D							

PARKINSON'S DISEASE	Suggested FORTA class	Netherland s (N=4)  FORTA class / Consensus coefficient	Italy (N=5)  FORTA class / Consensus coefficient	Nordic countries (N=4)  FORTA class / Consensus coefficient	Spain (N=4)  FORTA class / Consensus coefficient	Poland (N=7)  FORTA class / Consensus coefficient	UK/Ireland (N=4)  FORTA class / Consensus coefficient	Germany /Austria/S witzerland <sup>9</sup> (N=20)  FORTA class / Consensus	Mean consensus coefficient	EURO- FORTA Class  (original FORTA class in parentheses if different from consensus results)
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	(2018); if different marked with *							coefficient		
<b>Substance/group</b>										
L-DOPA	A	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	B 0.875	A 1.000	0.982	A
COMT (Catechol-O-Methyltransferase) Inhibitor Entacapone, opicapone	B	B 0.875	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 0.947	0.975	B
Dopamine agonists, e.g. Ropinirole	B	B 1.000	C 1.000	B 1.000	B 1.000	B 1.000	C 1.000	B 1.000	1.000	B
Pramipexole	B	B 1.000	C 1.000	B 1.000	B 1.000	B 1.000	C 1.000	C 0.973	0.986	(B) C
Piribedil, quinagolide, rotigotine	B	B 1.000	B 1.000	B 1.000	B 1.000	B 0.929	B 0.875	C 0.973	0.968	B
MAO-B inhibitors Rasagiline	C	C 0.875	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 0.921	0.971	C
Selegiline	C	C 0.875	C 1.000	C 1.000	C 1.000	D 1.000	C 1.000	D 1.000	0.982	C
Glutamate antagonists Amantadine	D	C 0.875	D 1.000	C 1.000	D 1.000	D 0.929	D 0.875	D 1.000	0.954	D
Bromocriptine, cabergoline	D	D 1.000	1.000	D						

Anticholinergics Biperidene	D	D 1.000	D 1.000	D 0.875	D 1.000	D 1.000	D 0.875	D 1.000	0.964	D
INCONTINENCE Drug therapy for urge incontinence	Suggested FORTA class (2018); if different marked with *	Netherland s (N=4) FORTA class / Consensus coefficient	Italy (N=5) FORTA class / Consensus coefficient	Nordic countries (N=4) FORTA class / Consensus coefficient	Spain (N=4) FORTA class / Consensus coefficient	Poland (N=7) FORTA class / Consensus coefficient	UK/Ireland (N=4) FORTA class / Consensus coefficient	Germany /Austria/Switzerland <sup>9</sup> (N=20) FORTA class / Consensus coefficient	Mean consensus coefficient	EURO-FORTA Class (original FORTA class in parentheses if different from consensus results)
Fesoterodine	B	C 0.750	B 0.875	B 0.667	B 0.875	B 1.000	C 1.000	B 0.889	0.865	B
Tolterodine	C	C 1.000	C 1.000	C 0.833	C 0.875	C 1.000	C 1.000	C 0.971	0.954	C
Trospium chloride	C	C 1.000	C 1.000	C 0.750	C 1.000	C 1.000	C 1.000	C 0.941	0.956	C
Extended-release Oxybutynin	C	D 1.000	C 1.000	C 0.833	C 1.000	C 1.000	C 1.000	C 0.971	0.972	C
Immediate-release Oxybutynin	D	D 1.000	D 1.000	D 0.833	D 1.000	D 1.000	D 1.000	D 1.000	0.976	D

GASTROINTESTINAL ILLNESSES/ CONCOMITANT THERAPY WITH NSAIDs	Suggested FORTA class (2018); if different marked with *	Netherland s (N=4)	Italy (N=5)	Nordic countries (N=4)	Spain (N=4)	Poland (N=7)	UK/Ireland (N=4)	Germany /Austria/S witzerland <sup>9</sup> (N=20)	Mean consensus coefficient	EURO- FORTA Class  (original FORTA class in parentheses if different from consensus results)
		FORTA class / Consensus coefficient								
<b>Substance/group</b>										
Proton pump inhibitors (PPI), only if absolutely necessary	B	B 0.875	B 0.800	B 1.000	B 1.000	B 1.000	B 1.000	B 0.921	0.942	B
H <sub>2</sub> receptor antagonists	C	C 1.000	C 0.800	C 1.000	C 1.000	C 0.929	C 1.000	C 1.000	0.961	C

Anemia	Suggested FORTA class (2018); if different marked with *	Netherland s (N=4)	Italy (N=5)	Nordic countries (N=4)	Spain (N=4)	Poland (N=7)	UK/Ireland (N=4)	Germany /Austria/S witzerland <sup>9</sup> (N=20)	Mean consensus coefficient	EURO- FORTA Class  (original FORTA class in parentheses if different from consensus results)
		FORTA class / Consensus coefficient								
<b>Substance/group</b>										

Substitution (iron, vitamin B12, folic acid in cases of deficiency)	A	A 1.000	A 1.000	A 1.000	A 1.000	A 0.929	A 1.000	A 1.000	0.990	A
Erythropoetin-stimulating agents (ESA) in patients with renal insufficiency	A	A 1.000	A 1.000	A 0.875	A 1.000	A 1.000	A 0.875	A 0.972	0.960	A
Iron substitution in patients with cardiac insufficiency	See cardiac insufficiency	-	-	-	-	-	-	-	-	-
With proof of iron deficiency										

Vaccinations	Suggested FORTA class (2018); if different marked with *	Netherlands (N=4) FORTA class / Consensus coefficient	Italy (N=5) FORTA class / Consensus coefficient	Nordic countries (N=4) FORTA class / Consensus coefficient	Spain (N=4) FORTA class / Consensus coefficient	Poland (N=7) FORTA class / Consensus coefficient	UK/Ireland (N=4) FORTA class / Consensus coefficient	Germany /Austria/Switzerland <sup>9</sup> (N=20) FORTA class / Consensus coefficient	Mean consensus coefficient	EURO-FORTA Class (original FORTA class in parentheses if different from consensus results)
Substance/group										
Annual influenza immunizations	A	A 1.000	A 1.000	A 1.000	A 1.000	A 0.857	A 1.000	A 1.000	0.980	A
Pneumococcal immunizations for persons ≥ 65 years	A	A 1.000	A 1.000	A 1.000	A 1.000	A 0.929	A 1.000	A 1.000	0.990	A

Shingles (Herpes Zoster) Vaccination	A	A 1.000	A 1.000	A 1.000	A 1.000	B 0.750	A 1.000	A 1.000	0.964	A
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		Netherland s (N=4)  Suggested FORTA class / Consensus coefficient	Italy (N=5)  FORTA class / Consensus coefficient	Nordic countries (N=4)  FORTA class / Consensus coefficient	Spain (N=4)  FORTA class / Consensus coefficient	Poland (N=7)  FORTA class / Consensus coefficient	UK/Ireland (N=4)  FORTA class / Consensus coefficient	Germany /Austria/S witzerland <sup>9</sup> (N=20)  FORTA class / Consensus coefficient	Mean consensus coefficient	EURO-FORTA Class  (original FORTA class in parentheses if different from consensus results)
<b>ONCOLOGICAL DISEASES: SOLID TUMORS</b>										
<b>INDICATION</b> Substance/group										
<b>BREAST CANCER</b> Adjuvant therapy										
Hormone therapy, e.g. Tamoxifen	B	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 0.954	0.993	B
Aromatase inhibitors	B	B 1.000	B 1.000	B 1.000	B 0.875	B 1.000	B 1.000	B 1.000	0.982	B
Immunotherapy / “Targeted” therapy Trastuzumab	B	C 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	1.000	B
Chemotherapy, e.g. CMF (Combination Cyclophosphamide,	C	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	C 1.000	1.000	C

Methotrexate, 5-Fluorouracil)										
AC/EC Regimen (Anthracycline/ Epirubicin, Cyclophosphamide)	C	C 1.000	1.000	C						
BREAST CANCER Advanced Stage										
Hormone therapy, e.g. tamoxifen, aromatase inhibitors	B	B 1.000	B 1.000	-	B 1.000	B 1.000	B 1.000	B 1.000	1.000	B
Immunotherapy/ Targeted Therapy Trastuzumab/ lapatinib	B	C 1.000	B 1.000	-	B 1.000	B 1.000	B 1.000	-	1.000	B
Chemotherapy, e.g. anthracyclins, taxanes	C	C 1.000	C 1.000	-	C 1.000	C 1.000	C 1.000	C 1.000	1.000	C
VEGF (Vascular Endothelial Growth Factor) Inhibition Bevacizumab	D	D 1.000	D 1.000	-	D 1.000	D 1.000	D 1.000	-	1.000	D
COLORECTAL CARCINOMA Adjuvant Therapy										
FOLFOX Regimen (Folinic acid, Fluorouracil, Oxaliplatin)	C	C 1.000	C 1.000	-	C 1.000	C 1.000	C 1.000	C 1.000	1.000	C
5-Fluorouracil based infusion regimen	C	C 1.000	C 1.000	-	C 1.000	C 1.000	C 1.000	B 1.000	1.000	C

Capecitabine	C	C 1.000	C 1.000	-	C 1.000	C 1.000	C 1.000	B 1.000	1.000	C
COLORECTAL CARCINOMA Advanced stage										
Chemotherapy FOLFOX (Folinic acid, Fluorouracil, Oxaliplatin)	C	C 1.000	C 1.000	-	C 1.000	C 1.000	C 1.000	C 1.000	1.000	C
VEGF (Vascular Endothelial Growth Factor) Inhibition Bevacizumab	C	C 1.000	C 1.000	-	C 1.000	C 1.000	C 1.000	-	1.000	C
EGFR (Epidermal- Growth-Factor- Receptor) Inhibition Cetuximab	C	C 1.000	C 1.000	-	C 1.000	C 1.000	C 1.000	C 1.000	1.000	C
Panitumumab	C	C 1.000	C 1.000	-	C 1.000	C 1.000	C 1.000	-	1.000	C
BRONCHIAL CARCINOMA Adjuvant therapy										
Adjuvant chemotherapy (Cisplatin-based)	C	C 1.000	C 1.000	-	C 1.000	C 1.000	C 1.000	C 1.000	1.000	C
BRONCHIAL CARCINOMA Advanced Stage										
Docetaxel	B	C 1.000	B 1.000	-	B 1.000	B 1.000	B 0.875	C 1.000	0.979	B
Vinorelbine	B	C 1.000	B 1.000	-	B 1.000	B 1.000	B 0.875	-	0.975	B
Primary combination therapy Cisplatin/gemcitabi	C	C 1.000	C 1.000	-	C 1.000	C 1.000	C 1.000	-	1.000	C

n, or cisplatin/vinorelbin										
GASTRIC CANCER										
ECF Regime (Epirubicin, Cisplatin, 5- Fluorouracil)	B	C 1.000	B 1.000	-	B 1.000	B 1.000	C 1.000	-	1.000	B
ONCOLOGICAL DISEASES HEMATOLOGICAL NEOPLASIAS	Suggested FORTA class (2018); if different marked with *	Netherland s (N=4)  FORTA class / Consensus coefficient	Italy (N=5)  FORTA class / Consensus coefficient	Nordic countries (N=4)  FORTA class / Consensus coefficient	Spain (N=4)  FORTA class / Consensus coefficient	Poland (N=7)  FORTA class / Consensus coefficient	UK/Ireland (N=4)  FORTA class / Consensus coefficient	Germany /Austria/S witzerland <sup>9</sup> (N=20)  FORTA class / Consensus coefficient	Mean consensus coefficient	EURO- FORTA Class  (original FORTA class in parentheses if different from consensus results)
INDICATION Substance/group										
MDS (Myelodysplastic syndrome) Azacytidine	B	B 1.000	B 1.000	-	B 1.000	B 1.000	B 0.875	-	0.975	B
AML (Acute myeloid leukemia) Anthracyclines + cytosine arabinoside (cytarabine)	B	B 1.000	B 1.000	-	B 1.000	B 1.000	C 1.000	-	1.000	B
CLL (Chronic lymphatic leukemia)	B	B 1.000	B 1.000	-	B 1.000	B 1.000	B 0.875	-	0.979	B

Chlorambucil, Fludarabin, Bendamustine										
CLL Obinutuzumab	B	B 1.000	B 1.000	-	B 1.000	B 1.000	B 0.875	-	0.975	B
CLL Rituximab	B	B 1.000	B 1.000	-	B 1.000	B 1.000	B 0.875	-	0.975	B
Multiple myeloma  Primary therapy with  Prednisolone	B	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 0.875	-	0.979	B
Thalidomide	B	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 0.875	-	0.979	B
Melphalan	B	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 0.875	-	0.979	B
Bortezomib	B	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 0.875	-	0.979	B
Lenalidomide	B	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 0.875	-	0.979	B
CLL Ibrutinib	C	C 1.000	C 1.000	-	C 1.000	C 1.000	C 1.000	-	1.000	C
CLL Idelalisib	C	C 1.000	C 1.000	-	C 1.000	C 1.000	C 1.000	-	1.000	C
ONCOLOGICAL		Netherland s (N=4) FORTA class	Italy (N=5) FORTA class	Nordic countries (N=4) FORTA class	Spain (N=4) FORTA class	Poland (N=7) FORTA class	UK/Ireland (N=4) FORTA class	Germany /Austria/S witzerland <sup>9</sup> (N=20)	Mean consensus	EURO- FORTA Class (original)

SUPPORTIVE THERAPY	Suggested FORTA class (2018); if different marked with *	/ Consensus coefficient	FORTA class / Consensus coefficient	FORTA class / Consensus coefficient	coefficient	FORTA class in parentheses if different from consensus results)				
Substance/group										
G-CSF (Granulocyte Colony Stimulation Factor)	A	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 0.875	A 1.000	0.982	A
Antiemetic agents (e.g. 5-HT receptor inhibitors)	A	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	A 1.000	1.000	A
Erythropoiesis Stimulating Agents, ESA	B	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 1.000	B 0.962	0.995	B

\*This substance or indication was suggested by the participating experts during the course of Round 1 and evaluated by the experts during Round 2, see second table below.

R1= Round 1

R2= Round 2

# Delphi Expert Consensus Validation<sup>5</sup>

F O R T A			
A	B	C	D

## NEW SUBSTANCES/INDICATIONS SUGGESTED BY EXPERTS Results to be corroborated in future consensus/research projects

Classification of long-term medications<sup>†</sup>  
for the pharmacotherapy of older patients  
by indication/diagnosis, ranked according to FORTA classification

(†long-term defined as > 4 weeks. Please note that the distinction between acute/chronic may not always be clear-cut; exceptions are noted)

EXISTING INDICATION vaccinations	Rater-based FORTA Class <b>(bold if:</b> $\kappa > 0.500$ , rater number $\geq 10$ and label distance $< 2$ ) <sup>9</sup>	Nr. of countries <sup>9</sup>	Mean $\kappa$ -Index <sup>9</sup>	Expert ratings on a numerical scale: A=1, B=2, C=3, D=4  Mean <sup>9</sup> ; Mode <sup>9</sup>	Selection of pertinent comments given by participating experts during the consensus procedure
Substance/group					
COVID-19 vaccination	<b>A</b>	5	0.982	1; 1	

## REFERENCES

1. Wehling M. Drug therapy in the elderly: too much or too little, what to do? A new assessment system: fit for the aged FORTA. Dtsch Med Wochenschr 2008; 133: 2289-91.
2. Wehling M. Multimorbidity and polypharmacy: how to reduce the harmful drug load and yet add needed drugs in the elderly? Proposal of a new drug classification: fit for the aged. J Am Geriatr Soc 2009; 57: 560-561.
3. Wehling M, Burkhardt H. Arzneitherapie für Ältere. Springer-Verlag, Heidelberg, 3. Auflage 2013.
4. Wehling M, Ed., Drug Therapy for the Elderly. Springer-Verlag, Wien 2013
5. Kuhn-Thiel AM. et al. Consensus validation of the FORTA (Fit fOR The Aged) List: a clinical tool for increasing the appropriateness of pharmacotherapy in the elderly. Drugs Aging. 2014; 31(2): 131-140.
6. Wehling M. et al. VALFORTA: a randomized trial to validate the FORTA (Fit fOR The Aged) classification. Age Ageing Jan 18, 2016, doi: 10.1093/ageing/afv200 [Epub ahead of print]
7. Wehling M. How to Use the FORTA ("Fit fOR The Aged") List to Improve Pharmacotherapy in the Elderly. Drug Res 2015, ePub
8. Pazan F. et al. The EURO-FORTA (Fit fOR The Aged) List: International Consensus Validation of a Clinical Tool for Improved Drug Treatment in Older People. Drugs Aging. 2018; 35(1):61-71.
9. Pazan F. et al. The FORTA (Fit fOR The Aged) List 2021: Fourth Version of a Validated Clinical Aid for Improved Pharmacotherapy in Older Adults. Drugs Aging 2022; 39: 245-247.

## SUMMARY OF STATISTICAL METHODS

(The following descriptions of the statistical methods and calculations are based on the first version of the FORTA List<sup>5</sup>. Former definitions and explanations are adopted unchanged.)

### Consensus Coefficient<sup>5</sup>

Consensus parameters were generated by calculating the percentage of experts' FORTA ratings (minus abstentions) agreeing with the original FORTA values, both overall and for each item separately ( $n = 266$ ). The coefficients were then corrected (cons\_corr) to weight the degree of deviation between the experts' individual FORTA ratings, expressed in terms of range class, from 0-3 as defined:

- Range = 0: unanimity among all experts, full weight;
- Range = 1: greatest range only from A to B or B to C, or C to D (neighboring classes),  $\frac{1}{2}$  weight;
- Range = 2: greatest distance from A to C or B to D, weight=0;
- Range = 3: greatest distance from A to D, weight=0.

### Confirmation/determination of FORTA labels<sup>5</sup>

In order to compare the rater-based FORTA labels with the original author-based labels, the labels A, B, C and D were transformed as follows<sup>5</sup>:

$$\begin{aligned} A &\rightarrow 1 \\ B &\rightarrow 2 \\ C &\rightarrow 3 \\ D &\rightarrow 4 \end{aligned}$$

These numerical “grades” were used for the calculation of arithmetic mean. The rater-based FORTA labels are derived from the arithmetic mean from Round 1, or if re-evaluated, from Round 2. The range for each grade was set at:

If  $1 \leq m < 1.5$  → FORTA Class **A**

If  $1.5 \leq m < 2.5$  → FORTA Class **B**

If  $2.5 \leq m < 3.5$  → FORTA Class **C**

If  $m \geq 3.5$

→ FORTA Class **D**

$m$ = arithmetic mean based on the grades 1-4

The results of The Delphi Consensus Validation Procedure confirmed the original FORTA labels for 96,9% of all substances (n=256, substances with low number of raters, less than four, are not taken into consideration); for 8 substances, the FORTA labels changed over the course of two rounds in all participating countries. All consensus-based FORTA ratings are listed in bold print: **A B C D**, and the original author-based FORTA ratings are supplied in parentheses: (A) (B) (C) (D).

**Asterisks in the first table mark substances or indications suggested by the panel members during the course of Round 1 and assessed by the experts during Round 2. Besides, the number of countries whose panel members suggested a substance was  $\geq 4$ .**

#### **Selection process for new substances and indications<sup>5</sup>**

- A total of 1 substance was accepted for potential addition to the revised FORTA List. Due to the large number of substances suggested, a selection procedure was adopted: acceptance of all substances suggested by  $\geq 4$  countries during Round 1, and all suggested indication areas
  - 1 new substance belonging to pre-existing FORTA indications was added to the EURO-FORTA list
- A kappa index was generated for each of those added substances to analyze the distribution of the raters' FORTA labels given. The kappa index is defined as the (proportion of "matching" labels – 0.25) / 0.75. This gives due consideration to the fact that a figure of 25% can theoretically be attained by chance alone with this particular constellation (the choice of 4 distinct labels, as with multiple choice).

Mean and mode were calculated according to the numerical scale used for the original FORTA substances

A → 1  
B → 2  
C → 3  
D → 4

If  $1 \leq m < 1.5$  → FORTA Class **A**

If  $1.5 \leq m < 2.5$  → FORTA Class **B**

If  $2.5 \leq m < 3.5$  → FORTA Class **C**

If  $m \geq 3.5$  → FORTA Class **D**

$m$ = arithmetic mean based on the grades 1-4

- The new substance had a kappa index higher than 0.500. Suggesting a high level of inter-rater agreement for this substance