

Appendix 1. Variables used to define frailty in ESPS 2012

Dimension	Question(s)	Dimension coding
Exhaustion	<p>Q1. In the last 4 weeks, have you had a general feeling of weakness, fatigue, or lack of energy?</p> <p>1. Not at all / 2. A little / 3. Often</p> <p><i>If (Q1=2 3):</i></p> <p>Q2. Was the fatigue mainly?</p> <p>1. Psychological / 2. Physical / 3. Both (physical and psychological)</p>	<p>1: if the individual reports having lacked energy and if it is not exclusively psychological.</p> <p>0: otherwise</p>
Unintentional weight loss	<p>Q1. Have you involuntarily lost weight over the last 12 months, outside any form of diet?</p> <p>1. Yes</p> <p>2. No</p> <p><i>If (Q1=1):</i></p> <p>Q2. How much weight have you lost in kilos?</p>	<p>1: if weight loss is greater than a 5% loss of original weight.</p> <p>0: otherwise</p>
Muscle weakness	<p>Q1. Do you have difficulty carrying a 5kg bag, such as a heavy bag of groceries, without help?</p> <p>Q2. Do you have difficulty using your hands and fingers without technical assistance?</p> <p>Q3. Do you have difficulty bending or kneeling down without help?</p> <p>1. No difficulty / 2. Some difficulty / 3. A great deal of difficulty /</p> <p>4. Incapable</p>	<p>1: if the individual reports having a great deal of difficulty (3) or if he/she considers himself/herself incapable to carrying out (4) at least one of the two activities mentioned.</p> <p>0: otherwise.</p> <p><i>If an individual reports having difficulty carrying a 5kg bag, he/she must report not having difficulties using hands and fingers for the response to be valid.</i></p>

Dimension	Question(s)	Dimension coding
Impaired mobility	<p>Q1. Do you have difficulty walking 500 metres without help?</p> <p>Q2. Do you have difficulty going up or down a dozen or more steps without help?</p> <p><i>For each question:</i></p> <p>1. No difficulty</p> <p>2. Some difficulty</p> <p>3. Great difficulty</p> <p>4. Incapable</p>	<p>1: if the individual reports a great deal of difficulty (3) or if he/she considers being incapable (4) of carrying out at least one of the two activities mentioned.</p> <p>0: otherwise</p>
Low level of physical activity	<p>Q1. During the course of a normal week, on how many days do you take a walk lasting at least 10 minutes?</p> <p>Q2. During the course of a normal week, on how many days do you ride a bicycle for at least ten minutes?</p> <p>Q3. During the course of a normal week, on how many days to you practice a sport (jogging, fitness, swimming, VTT, etc.) for at least 10 minutes continuously?</p> <p><i>For each question:</i></p> <p>...days (0 if never)</p> <p>Precisely, how much time per day do you spend on these activities ...h ...min.</p>	<p>1: if the individual reports not participating in any of the three activities proposed.</p> <p>0: otherwise</p>

Appendix 2. Potentially inappropriate medications use in people aged 65+ included in ESPS 2012

Potentially inappropriate medication	ATC	N	Crude prevalence (%)	Prevalence using sampling weights (%)
Laroche list criteria^a				
Non-steroidal anti-inflammatory drugs (NSAIDs)		74	3.9	3.9
Indometacine	M01AB01	2	0.1	0.1
≥ 2 NSAIDs	M01A	72	3.1	3.8
Anticholinergic drugs		161	8.5	9.2
Tricyclic antidepressant		47	2.5	2.4
Amitriptyline	N06AA09	31	1.6	1.8
Clomipramine	N06AA04	13	0.7	0.5
Dosulepine	N06AA16	2	0.1	0.1
Trimipramine	N06AA06	1	0.1	0.0
Amoxapine	N06AA17	0		
Maprotiline	N06AA21	0		
Doxepine	N06AA12	0		
Imipramine	N06AA02	0		
Phenothiazine antipsychotics		17	0.9	8.4
Cyamemazine	N05AA06	15	0.8	0.8
Levomepromazine	N05AA02	2	0.1	0.1
Chlorpromazine	N05AA01	0		
Fluphenazine	N05AB02	0		
Pipotiazine	N05AC04	0		
Anticholinergic hypnotics		8	0.4	0.4
Alimemazine	R06AD01	8	0.4	0.4

Potentially inappropriate medication	ATC	N	Crude prevalence (%)	Prevalence using sampling weights (%)
Doxylamine	R06AA09	0		
Antihistamins H1		79	4.2	4.7
Hydroxyzine	N05BB01	69	3.7	4.0
Mequitazine	R06AD07	11	0.6	0.8
Cyproheptadine	R06AX02	0		
Dexchlorpheniramine	R06AB02	0		
Brompheniramine	R06AB01	0		
Promethazine	R06AD02	0		
Anticholinergic urinary antispasmodics		28	1.5	1.7
Solifenacine	G04BD08	28	1.5	1.5
Oxybutynine	G04BD04	9	0.5	0.6
Tolterodine	G04BD07	0		
Long-acting benzodiazepines		232	12.3	12.6
Bromazepam	N05BA08	138	7.3	7.7
Prazepam	N05BA11	45	2.4	2.5
Clonazepam	N03AE01	25	1.3	1.2
Loflazepate	N05BA18	10	0.5	0.6
Clorazepate dipotassique	N05BA05	9	0.5	0.6
Diazepam	N05BA01	8	0.4	0.4
Clobazam	N05BA09	6	0.3	0.3
Nordazepam	N05BA16	5	0.3	0.2
Nitrazepam	N05CD02	4	0.2	0.2
Antihyperthensives		98	5.2	6.2
Centrally acting		60	3.2	4.0
Rilmenidine	C02AC06	51	2.7	3.4
Moxonidine	C02AC05	7	0.4	0.5
Clonidine	C02AC01	2	0.1	0.1

Potentially inappropriate medication	ATC	N	Crude prevalence (%)	Prevalence using sampling weights (%)
Méthyl dopa	C02AB02	0		
Short-acting calcium-channel blockers		42	2.2	2.4
Nicardipine	C08CA04	35	1.9	1.9
Nifedipine	C08CA05	8	0.4	0.6
Reserpine	C02AA02	0		
Antiarrhythmics		1	0.1	
Disopyramide	C01BA03	1	0.1	0.0
Gastrointestinal drugs		2	0.1	0.1
Stimulant laxatives		0		
Docusate	A06AA02	0		
Bisacodyl	A06AB02	0		
Ricin oil	A06AB05	0		
Sennosides	A06AB06	0		
Cascara	A06AB07	0		
Sodium picosulfate	A06AB08	0		
Cimetidine	A02BA01	2	0.1	0.1
Gastrointestinal antispasmodics		0		
Chlordiazepoxide-clidinium	A03CA02	0		
Tiemonium	A03AB17	0		
Dihexyverine	A03AA08	0		
Scopolamine	A04AD01	0		
Long-acting sulfonylureas		1	0.1	0.1
Glipizide	A10BB07	1	0.1	0.1
Carbutamide	A10BB06	1	0.1	0.1
Muscle relaxants		8	0.4	0.4
Baclofene	M03BX01	8	0.4	0.4

Potentially inappropriate medication	ATC	N	Crude prevalence (%)	Prevalence using sampling weights (%)
Methocarbamol	M03BA03	0		
Cerebral vasodilators		144	7.6	8.5
Ginkgo	N06DX02	71	3.8	4.5
Naftidrofuryl	C04AX21	35	1.9	1.7
Piribedil	N04BC08	23	1.2	1.3
Nicergoline	C04AE02	11	0.6	0.6
Piracetam	N06BX03	7	0.4	0.4
Dihydroergocristine	C04AE54	5	0.3	0.3
Pentoxifylline	C04AD03	3	0.2	0.2
Moxisylyte	C04AX10	0		
Vinburnine	04AX17	0		
Other drugs with anticholinergic properties and questionable efficacy		139	7.4	7.2
Oxomemazine	R06AD08	77	4.1	3.6
MetoPIMsazine	A04AD05	54	2.9	3.4
Diphenhydramine in combination	R01BA52	13	0.7	0.5
Triprolidine in combination	R01BA52	13	0.7	0.5
Meclozine	R06AE05	2	0.1	0.2
Alizapride	A03FA05	0		
PIMsetixene	R06AX23	0		
Promethazine	R06AD02	0		
Antiplatelet drugs		1	0.1	0.1
Ticlopidine	B01AC05	1	0.1	0.1
Dipyridamole	B01AC07	0		
Antimicrobial		17	0.9	1.0
Nitrofurantoïne	J01XE01	17	0.9	1.0
Concomitant dispensation of psychotropic drugs of the same the same class		34	1.8	2.0

Potentially inappropriate medication	ATC	N	Crude prevalence (%)	Prevalence using sampling weights (%)
Concomitant dispensation of 2 benzodiazepines	N05BA N05CD N05CF N03AE01 M03BX07	28	1.5	1.7
Concomitant dispensation of 2 antidepressants	N06A	4	0.2	0.2
Concomitant dispensation of 2 antipsychotics	N05A	3	0.2	0.2
Concomitant dispensation of anticholinesterase drugs and drugs with anticholinergic properties	N06DA	3	0.2	0.2
Additional criteria				
Prolonged use of hypnotics (≥ 3 reimbursement over a 4-month period) ^b	N05CF01 N05CF02	123	6.5	7.4
Prolonged use of benzodiazepines (≥ 3 reimbursement over a 4-month period) ^c	N05BA N05CD N05CF N03AE01 M03BX07	338	17.9	19.9
Prolonged use of NSAIDs (≥ 3 remboursements over a 4-month period) ^c	M01A	211	11.2	11.3
At least one PIMS of the Laroche list		664	35.1	36.8
At least one PIMS of the Laroche list + other criteria		841	44.5	46.7

^a Source : Laroche 2007

^b Source : Beers 2012

^c Source : Jardin 2012

Appendix 3. Poisson regression models of the number of frailty criteria (non-imputed variables) according to medications among participants aged 65+ in ESPS 2012

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Polypharmacy						
5-9 versus 0-4 drugs	1.612***		1.181**		1.163*	1.181*
10+ versus 0-4 drugs	2.796***		1.461***		1.418***	1.449**
PIMS						
At least one PIM of the Laroche list + other criteria		1.513***		1.147**	1.066	1.118
Anticholinergic drugs		1.468***		1.174*	1.139	1.331*
Long-acting benzodiazepines		1.271**		1.085	1.018	0.917
Antihypertensives		1.297**		0.913	0.893	0.402
Cerebral vasodilators		1.246**		1.110	1.048	1.305
Concomitant dispensation of psychotropic drugs of the same class		1.613***		1.173	1.141	1.084
Prolonged use of hypnotics (≥ 3 reimbursements over a 4-month period) ^b		1.362**		1.039	0.950	1.168
Prolonged use of benzodiazepines (≥ 3 reimbursements over a 4-month period) ^c		1.500***		1.088	1.005	1.023
Prolonged use of NSAIDs (≥ 3 reimbursements over a 4-month period) ^c		1.190*		1.175**	1.114	0.807

Note:

Values are Incidence Rate Ratio (IRR)

* $p < .1$; ** $p < .05$; *** $p < .001$

Model 1: number of frailty criteria ~ polypharmacy

Model 2: number of frailty criteria ~ PIMS

Model 3: number of frailty criteria ~ polypharmacy + confounders

Model 4: number of frailty criteria ~ PIMS + confounders

Model 5: number of frailty criteria ~ polypharmacy + PIMS + confounders

Model 6: number of frailty criteria ~ polypharmacy + PIMS + interaction term + confounders

Confounders: age, gender, difficulties in activities of daily living, self-perceived health, cardiovascular diseases, musculoskeletal diseases, diabetes, depression, and BMI