2018 ESC Guidelines for the diagnosis and management of syncope

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Michele Brignole (Chairperson) (Italy); **Angel Moya** (Co-chairperson) (Spain); **Jean-Claude Deharo** (France); **Frederik de Lange** (The Netherlands); **Perry Elliott,** (UK); **Artur Fedorowski** (Sweden); **Alessandra Fanciulli** (Austria); **Raffaello Furlan** (Italy); **Rose Anne Kenny** (Ireland); **Alfonso Martin** (Spain); **Vincent Probst** (France); **Matthew Reed** (UK); **Ciara Rice** (Ireland); **Richard Sutton** (Monaco); **Andrea Ungar** (Italy); **Gert van Dijk** (the Netherlands)

European Heart Journal (2018) 39, 1883–1948

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Available on www.escardio.org/Guidelines

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The most multidisciplinary guideline on syncope

Task Force members by Specialty (total 16)	
Cardiology (#7)	Brignole, Moya, de Lange, Deharo, Elliott, Probst, Sutton
Emergency Medicine (#2)	Martin Martinez, Reeds
Neurology (#2)	Fanciulli, van Dijk
Geriatrics (#2)	Kenny, Ungar
Internal medicine, physiology (#2)	Fedorowski, Furlan
Nursing (#1)	Rice

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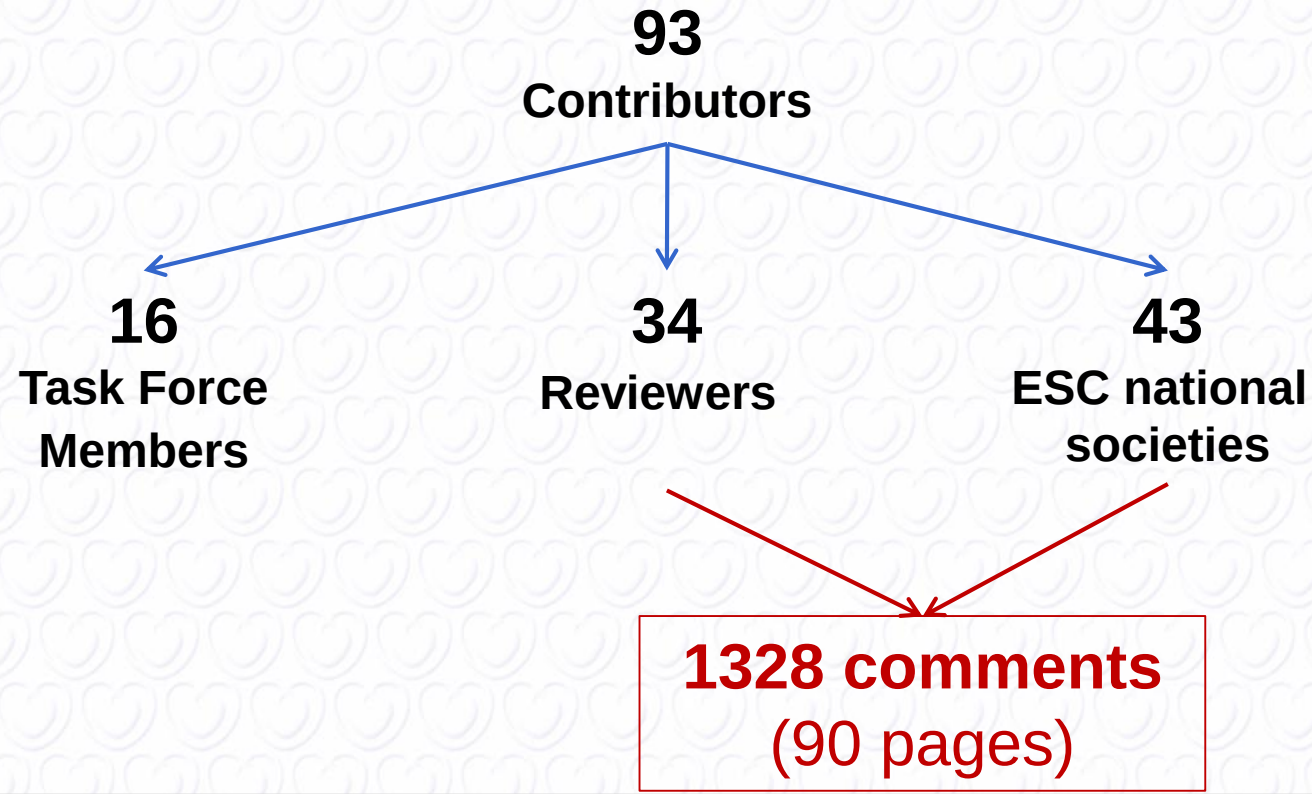

Contributors: geographical distribution

…plus one representative for
43 EU national societies

The most international and multidisciplinary guideline on syncope
The largest consortium of experts

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Timelines

Chair invitation letter	**May 15, 2015**	Appointment of TF members
1° TF meeting	September 30, 2015	Table of content & assignments
2° TF meeting	January 25-26, 2016	Mastercopy 1
3° TF meeting	October 24-25, 2016	Mastercopy 2
External review (I)	March, 2017	
4° TF meeting	May 3, 2017	Revision round 1
External review (II)	June, 2017	Revision round 2
CPG comments (I)	October 7, 2017	Reply 1
CPG comments (II)	October 30, 2017	Reply 2
	November, 2017	CPG approval
Editing process	**March, 2018**	Sent EHJ for publication

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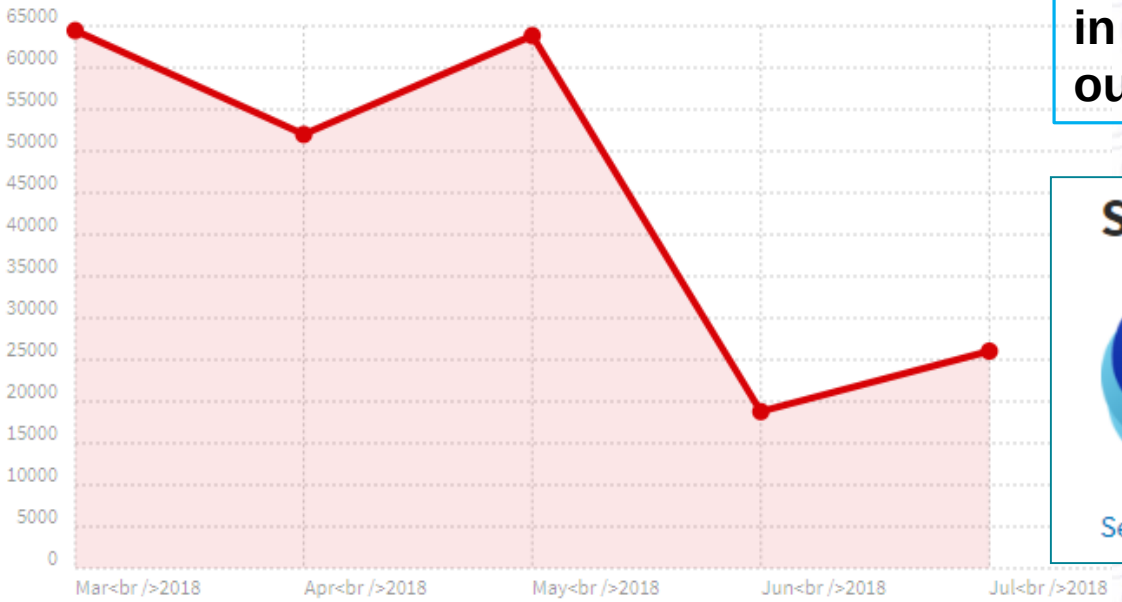

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Updated July 2018

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What's new

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NEW / REVISED CLINICAL SETTINGS AND TESTS:

- Tilt testing: concepts of *hypotensive susceptibility*
- Increased role of prolonged ECG monitoring
- Video recording in suspected syncope
- "Syncope without prodrome, normal ECG and normal heart" (adenosine sensitive syncope)
- Neurological causes: "ictal asystole"

NEW / REVISED INDICATIONS FOR TREATMENT:

- *Reflex syncope:* algorithms for selection of appropriate therapy based on age, severity of syncope and clinical forms
- *Reflex syncope:* algorithms for selection of best candidates for pacemaker therapy
- *Patients at risk of SCD:* definition of unexplained syncope and indication for ICD
- *Implantable loop recorder* as alternative to ICD, in selected cases

2018 NEW/REVISED CONCEPTS in management of syncope

(OUT-PATIENT) SYNCOPE MANAGEMENT UNIT:

- Structure: staff, equipment, and procedures
- Tests and assessments
- Access and referrals
- Role of the Clinical Nurse Specialist
- Outcome and quality indicators

MANAGEMENT IN EMERGENCY DEPARTMENT:

- List of low-risk and high-risk features
- Risk stratification flowchart
- Management in *ED Observation Unit* and/or fast-track to *Syncope Unit*
- Restricted admission criteria
- Limited usefulness of risk stratification scores

What is new in 2018 syncope guidelines ?

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2018 NEW RECOMMENDATIONS (only major included)

Management of syncope in ED (section 4.1.2)

- *Low-risk*: discharge from ED
- *High-risk*: early intensive evaluation in ED, SU versus admission
- *Neither high or low*: observation in ED or in SU instead of being hospitalized

Video recording (section 4.2.5):

- Video recordings of spontaneous events

ILR indications (section 4.2.4.7):

- In patients with suspected unproven epilepsy
- In patients with unexplained falls

ILR indications (section 5.6):

- In patients with primary cardiomyopathy or inheritable arrhythmogenic disorders who are at low risk of sudden cardiac death, as alternative to ICD

Management of syncope in the ED

Should the patient be admitted to hospital?

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Favour initial management in ED observation unit and/or fast-track to syncope unit	Favour admission to hospital
High-risk features AND: • Stable, known structural heart disease. • Severe chronic disease. • Syncope during exertion. • Syncope while supine or sitting. • S • P • I • S intervention. • Pre-excited QRS complex. • SVT or paroxysmal atrial fibrillation. • ECG suggesting an inheritable arrhythmogenic disorders. • ECG suggesting ARVC.	**High-risk features AND:** • Any potentially severe coexisting disease that requires admission. • Injury caused by syncope. • Need of further urgent evaluation and r device malfunction, etc. • Need for treatment of syncope.

Objective: Zero admission

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Key messages
Diagnosis: subsequent investigations

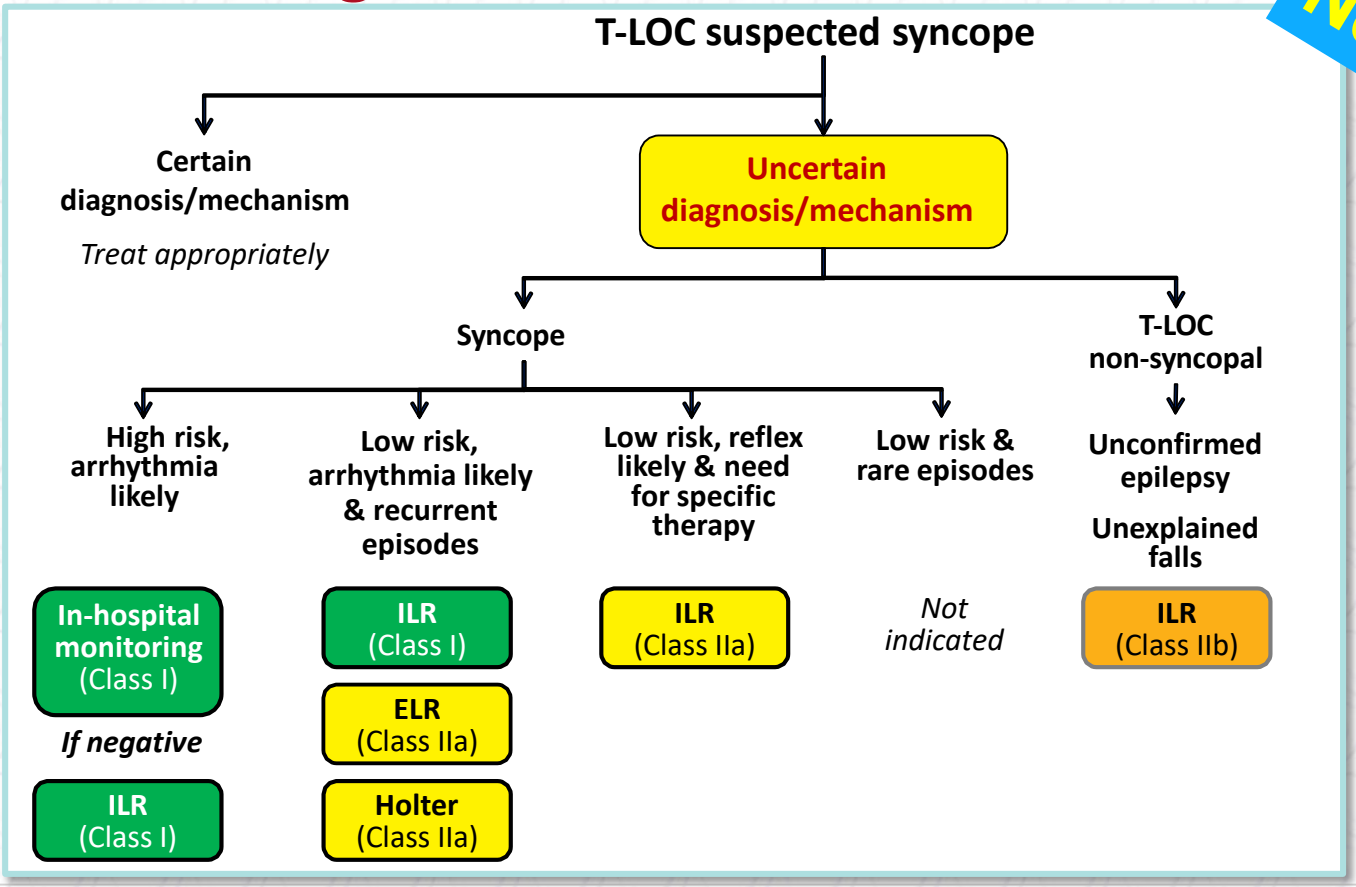
New 2018

13. Consider video recording (at home or in hospital) of TLOC suspected to be of non-syncopal nature.

Recommendations	Class	Level
1. Home video recordings of spontaneous events should be considered. Physicians should encourage patients and their relatives to obtain home video recordings of spontaneous events.	IIa	C
2. Adding video recording to tilt testing may be considered in order to increase reliability of clinical observation of induced events.	IIb	C

ECG monitoring: indications

New 2018



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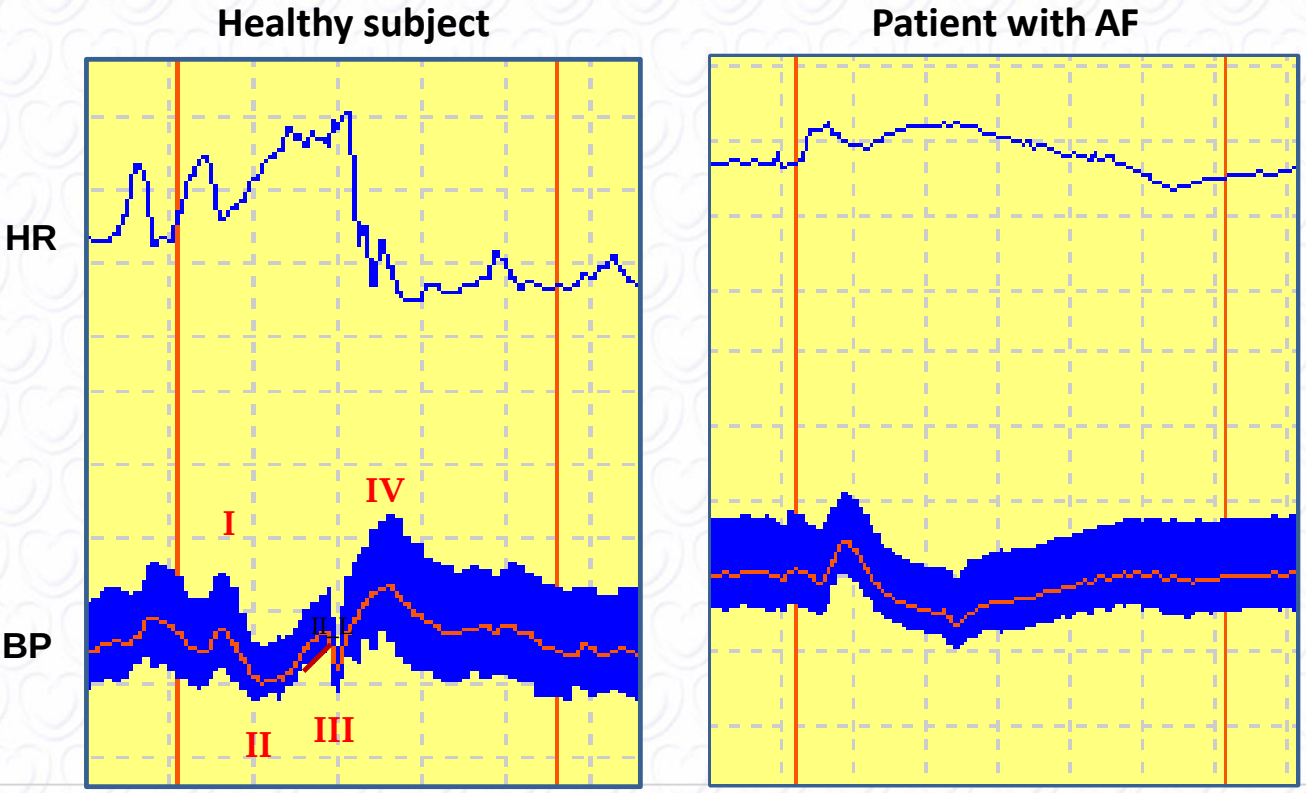
Key messages
Diagnosis: subsequent investigations

New 2018

12. Consider basic cardiovascular autonomic function tests (Valsalva manoeuvre and deep-breathing test) and ABPM for the assessment of autonomic function in patients with suspected neurogenic OH.

Basic cardiovascular autonomic function tests

Valsalva manoeuvre



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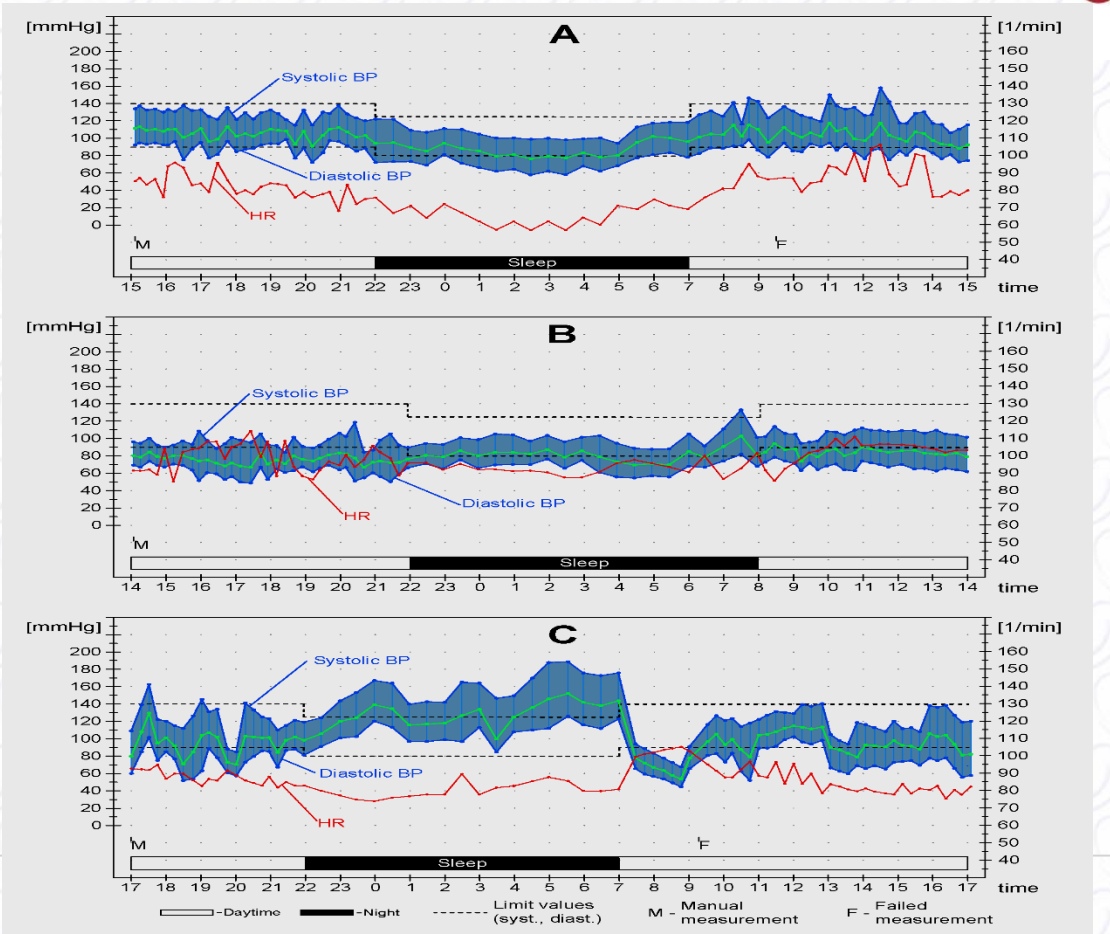
Basic cardiovascular autonomic function tests

ABPM

Nocturnal dipping

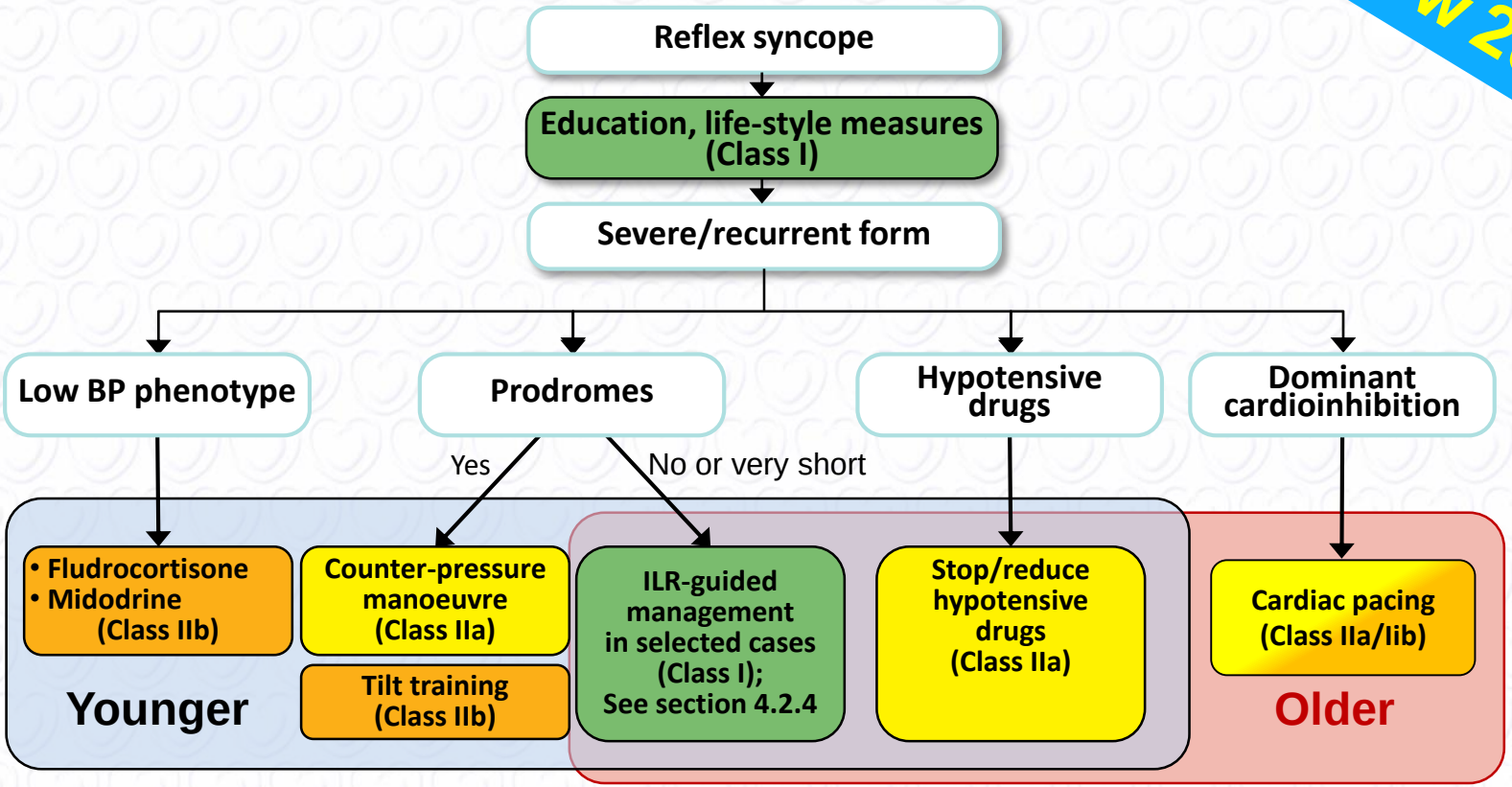
Non-dipping

Reverse dipping



Treatment syncope: **Reflex syncope**

New 2018



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Rationale for an effective pacing therapy

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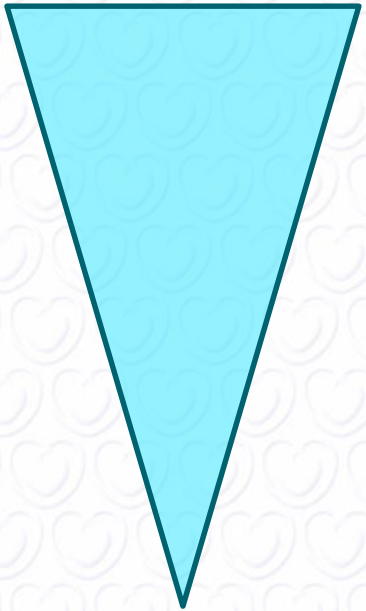
Expected benefit with Pacemaker

Highest (responders)



Lowest (non-responders)

Bradycardia/asystole

Hypotension

Treatment of syncope: **General principles**

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Cardiac pacing in different clinical settings

Expected 2-year syncope recurrence rate	Clinical setting	
High efficacy (≤5% recurrence rate)	Established bradycardia	no hypotensive mechanism
Moderate efficacy (5% to 25% recurrence rate)	Established bradycardia	*and* hypotensive mechanism
Low efficacy (>25% recurrence rate)	Suspected bradycardia	*and* hypotensive mechanism

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Key messages

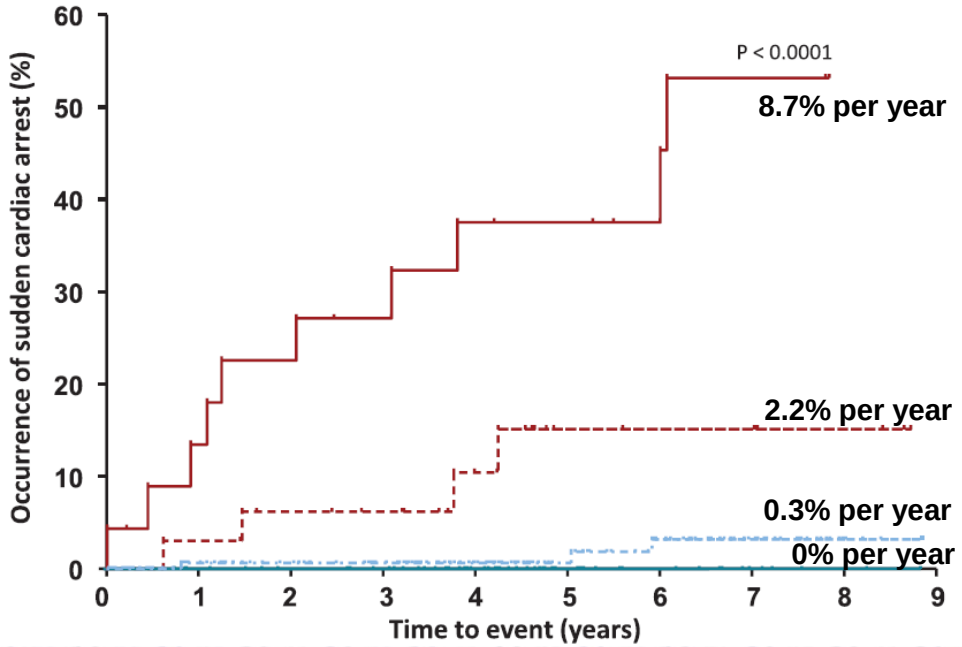
Treatment of syncope: **Unexplained syncope in patients at high risk of SCD**

New 2018

18. Balance the benefits and harm of ICD implantation in patients with *unexplained syncope* at high risk of SCD (e.g. those affected by left ventricle systolic dysfunction, HCM, ARVC, or inheritable arrhythmogenic disorders)**. In this situation, *unexplained syncope* is defined as syncope that does not meet any class I diagnostic criterion defined in the tables of recommendations of the 2018 ESC Guidelines on syncope and is considered a suspected arrhythmic syncope**.

Instead of an ICD, an ILR may be considered in patients with recurrent episodes of unexplained syncope who are at lower risk of SCD

Treatment of syncope: **Brugada syndrome**



Aborted cardiac arrest (n=23)

Suspected arrhythmic syncope (n=33)

Asymptomatic (n=201)
Suspected non-arrhythmic syncope (n=67)

Suspected non-arrhythmic syncope:
- certain or highly likely reflex syncope
- orthostatic hypotension

Suspected arrhythmic syncope:
- during fever,
- with sudden onset without prodromes
- without typical triggers for reflex or situational syncope
- in the presence of drugs associated with BrS

Olde Nordkamp et al. - Heart Rhythm 2015; 12: 1367-375

Treatment of syncope: **Unexplained syncope in patients at high risk of SCD (IV)**

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Recommendations	Class	Level
Brugada syndrome		
1. ICD implantation should be considered in patients with a spontaneous diagnostic type I ECG pattern and a history of unexplained syncope.	**IIa**	C
4. Instead of an ICD, an ILR may be considered in patients with recurrent episodes of unexplained syncope who are at low risk of SCD, based on a multiparametric analysis that takes into account the other known risk factors for SCD	**IIa**	C
Unexplained syncope is defined as syncope that does not meet a Class I diagnostic criterion defined in the tables of recommendations. In the presence of clinical features described in this section, unexplained syncope is considered a risk factor for ventricular tachyarrhythmias.		

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Key messages
Treatment

Not new….

19. Re-evaluate the diagnostic process and consider alternative therapies if the above rules fail or are not applicable to an individual patient. Bear in mind that Guidelines are only advisory. Even though they are based on the best available scientific evidence, treatment should be tailored to an individual patient's need

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