

SYNCOPE

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GENERAL RULES SYNCOPE:

- Definition
- Importance/prevalence/incidence
- Pathophysiology
- Strategy of examination – diff. dg.
- Solution: admission to ICU, hospital, referral to other specialist(s), out-patient management, ...
 - Treatment
- Pitfalls – special groups (elderly, diabetic population, ...)

DEFINITION:

- *Syncope = marker of other diseases/syndrome*
- Short term loss of consciousness with spontaneous recovery. *Usually in less than 20 s.*
- Single event. x recurrent

Importance

- Life/health threatening conditions – also to others

Pathophysiology

- **Sudden impairment of brain metabolism caused by hypotension/reduction of blood flow**

Impairment of:

- Pressor reflexes – constriction of arterioles/venules
 - Reflex acceleration of heart rate
 - Improvement of venous return by limb muscle activity
- + other conditions (obstruction of carotid arteries, ...)

Main Strategy:

- Cardiac structural disease 6+ arrhythmias (A-V blocks, VT, ...)

x

- Non-structural cardiovascular disease

x

Seizures /Hypoglycemia/Acute Hemorrhage/Hysterical fainting

Cardiac:

- 1. Potentially malignant arrhythmia (VT, A-V blok, SSSy): HR - 30-180/min, pause more than 3 s (Stokes –Adam-Morgagni sy)**
- 2. Stenosis of aortic valve, hypertrophic cardiomyopathy**
- 3. Combination of (posterior) MI +AV block, ventricular tachycardia**

Cardiovascular:

1. Neurocardiogenic :*vasovagal*- decreased sympathetic tone (vasodilation) + decreased parasympathetic activity (bradycardia) x *vasodepressor* – only decreased sympathetic tone
2. Postural (orthostatic) hypotension – elderly
3. Carotid sinus hypersensitivity – tight collar, tie
4. Situational: cough, micturition, defecation, deglutition
5. Glossopharyngeal neuralgia

Other:

- 1. Seizures – aura, confusion after, tonic-clonic movements**
- 2. Repeat now -**

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2. Repeat now –

Hypoglycemia/Acute Hemorrhage/Hysterical fainting

History

Physical
examination

Laboratory
measurements

Non-invasive
approaches

Invasive
approaches

SYNCOPE:

1. Provocating/alleviating situations/maneuvers
2. Accompanying signs/risk factors, ...
3. Time course/duration – new, long-lasting, worsening
4. **Drugs !!!**

Syncope – critical history before/after

The position prior to the event

standing, sitting, or lying

Activities preceding the episode

micturition, defecation, exertion, ...

A history of symptoms preceding syncope

dizziness, diaphoresis, warmth, nausea, weakness, yawning,
chest pain, dyspnea, and palpitations

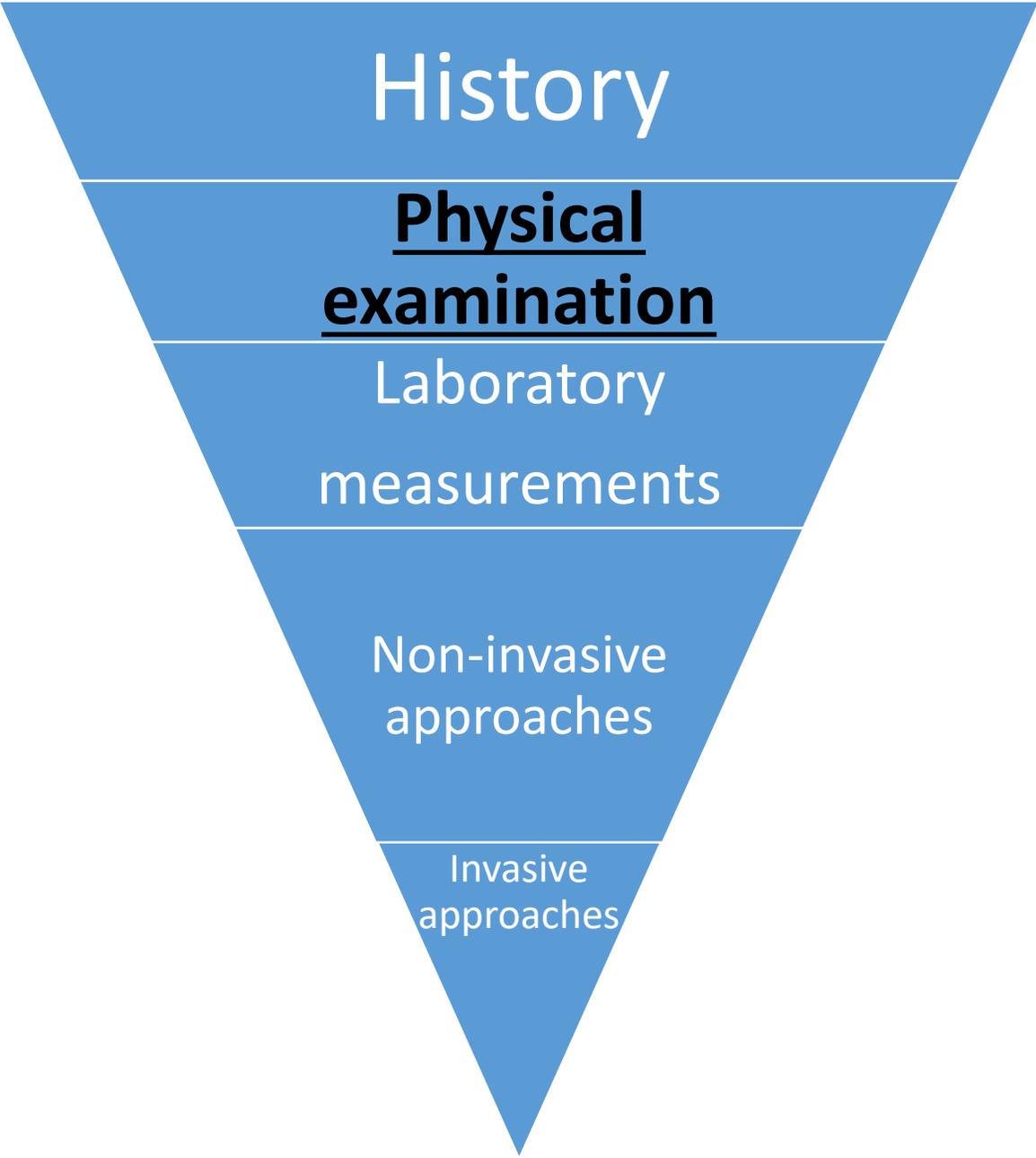
Injury to patient or others ?

Syncope – critical history after

Symptoms that occurred when the patient regained consciousness:

- **Lethargy, confusion, headaches, vomiting,**
- + specific neurologic symptoms.**

Total duration of symptoms after the episode



History

Physical examination

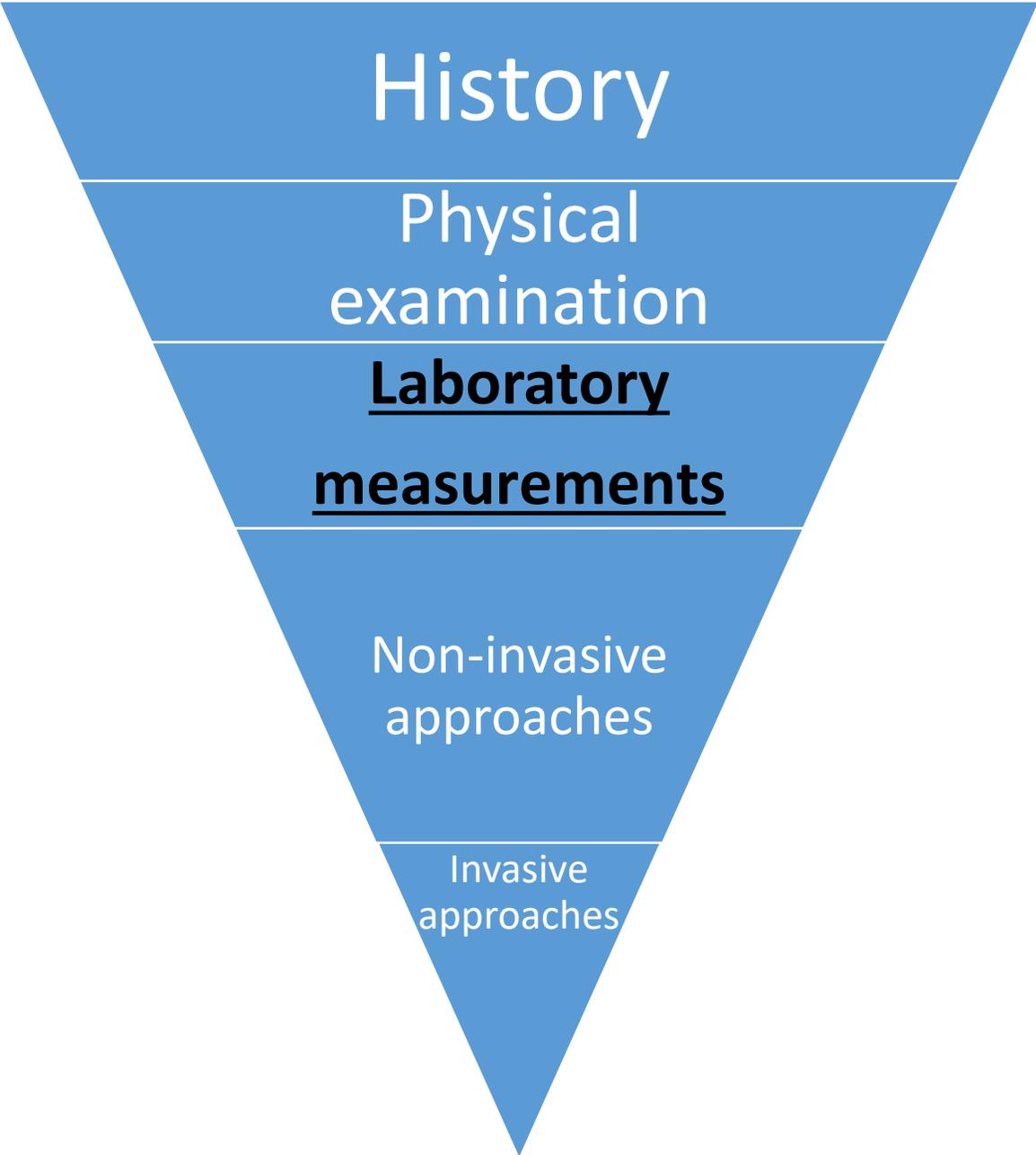
Laboratory measurements

Non-invasive approaches

Invasive approaches

1. General outlook – well, ... , about to die.
2. Cognitive functions,
3. Hydration, color, ...
4. Vital signs – BP (standing), heart rate, respiratory rate, temperature, saturation (O₂)
5. „CT method“:

From the head to the feet



History

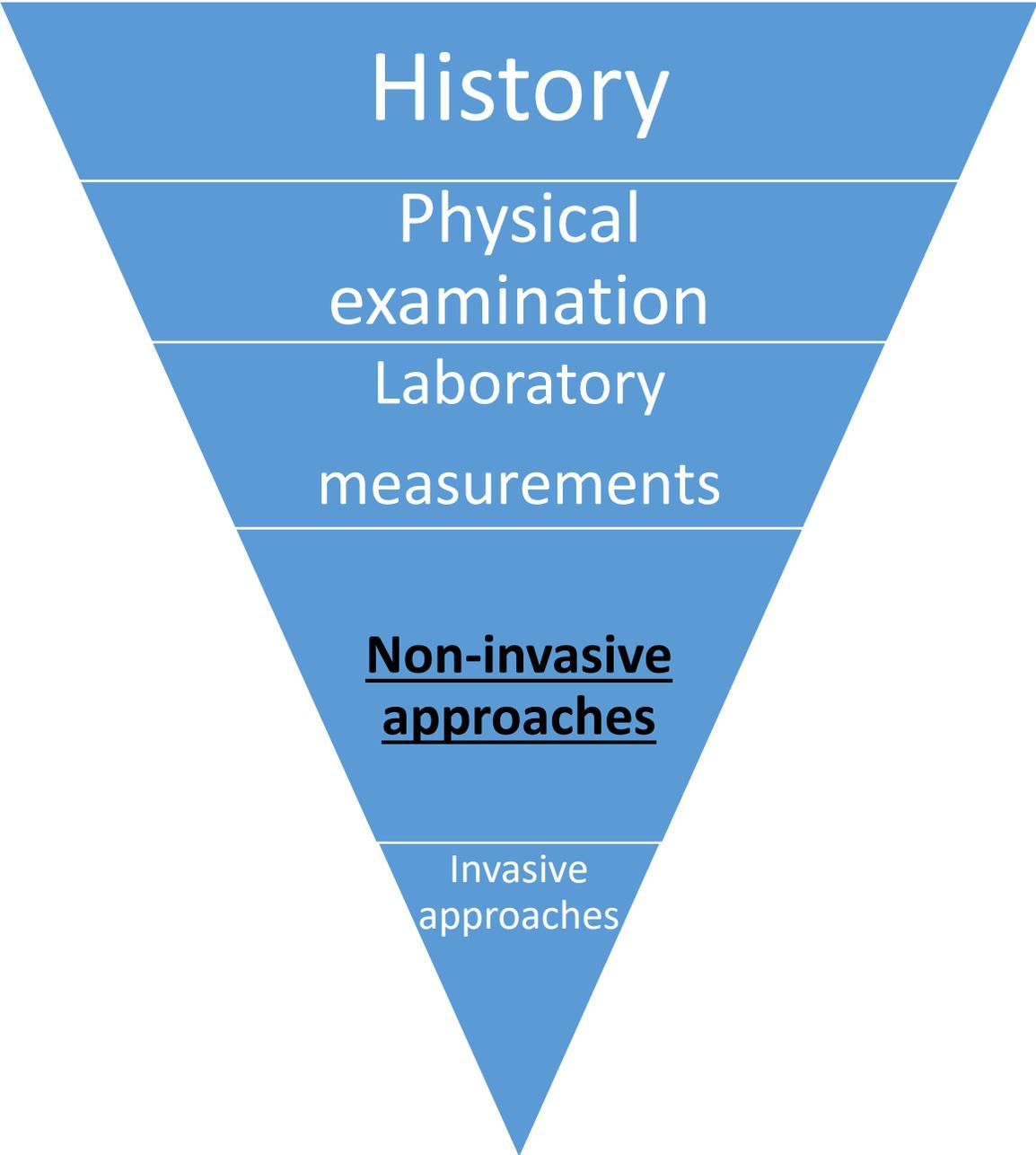
Physical
examination

**Laboratory
measurements**

Non-invasive
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1. **Glycemia**
2. **Blood gases (pH, pCO₂, PO₂, ...)**
3. **Cardiospecific markers (troponines, BNP, ...)**
4. **Blood count - differential**
5. **Inflammatory markers: Sed. Rate, C-reactive protein, procalcitonine, interleukin-6/10, ...**
6. **Minerals (Na, K, Cl, Ca, P, Mg ...)**
7. **Renal function – creatinine, urea, urine analysis ...**
8. **Status of coagulation INR/QUICK, aPTT, D-Dimers**
9. **Liver tests, bilirubin, amylases, (pre)albumin, ...**
10. **Toxicology_(unconsciousness of unknown origin ...)**



History

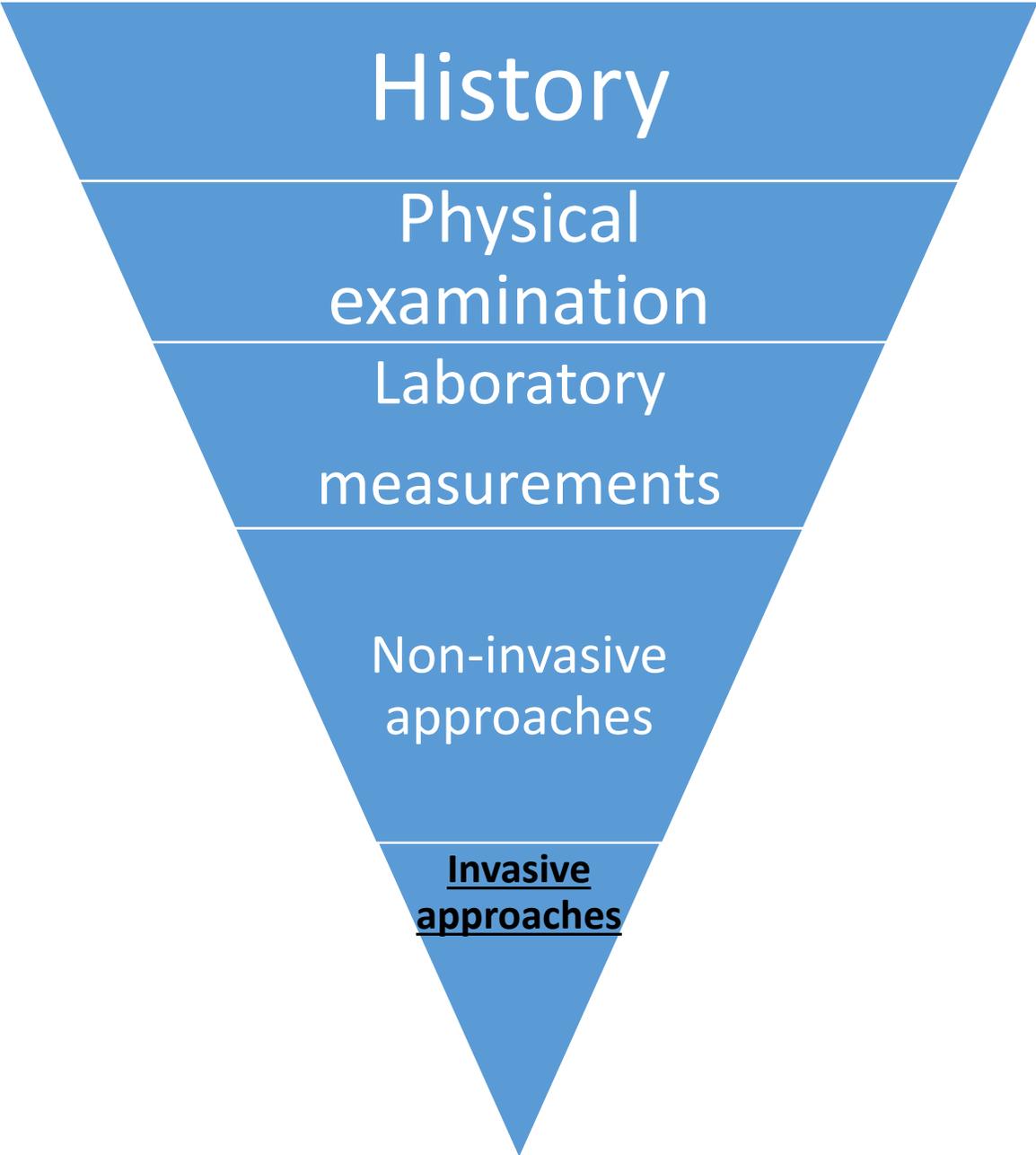
Physical
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Laboratory
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**Non-invasive
approaches**

Invasive
approaches

1. **ECG – long tracing**
2. **Monitoring of ECG 24 ... h (Holter, King), Blood pressure**
3. **Ultrasound studies (echo)**
4. **Computer tomography (CT)**
5. **Magnetic resonance (MR)**
6. **Functional tests– bicycle/treadmill ECG**
7. **Tilt test, walking test**
8. **Combine 1-9, ...**



History

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examination

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1. Gastroscopy, colonoscopy

2. Angiography

3. Electrophysiological studies

CAUSES OF SYNCOPE ACCORDING TO IMPORTANCE/URGENCY (COULD BE SIMILARLY USED IN DYSPNEA/CHEST PAIN, ...).

	Imminent threat to life	Less urgent situations
Cardiac	Malignant arrhythmia Ventricular tachycardia Higher degree AV block AV dissociation	Stenosis of aortic valve
Pulmonary	Hemodynamically significant pulmonary embolism	Hemodynamically <u>non-significant</u> pulmonary embolism
Other	Massive hemorrhage	Vasovagal ...

SYNCOPE – SUBSEQUENT RISK

Risk of cardiac arrhythmias or death in the year after presentation:

Age over 45

History of heart failure

History of ventricular arrhythmias

Abnormal ECG.

Patients with none of the predictors had 4% to 7% risk of this outcome as compared with 58% to 80% in patients with 3 or 4 risk factors.

MANAGEMENT

- **Find and correct/prevent (specific) correctable causes of syncope – repeat now**
 - **Betablockers**
 - **Pacemaker, ICD, ...**
- + Driving license, work at heights, ... !!!**

TAKE HOME MESSAGE

- **EXCLUDE CARDIAC CAUSE**
- **EXCLUDE CORRECTABLE CAUSE**