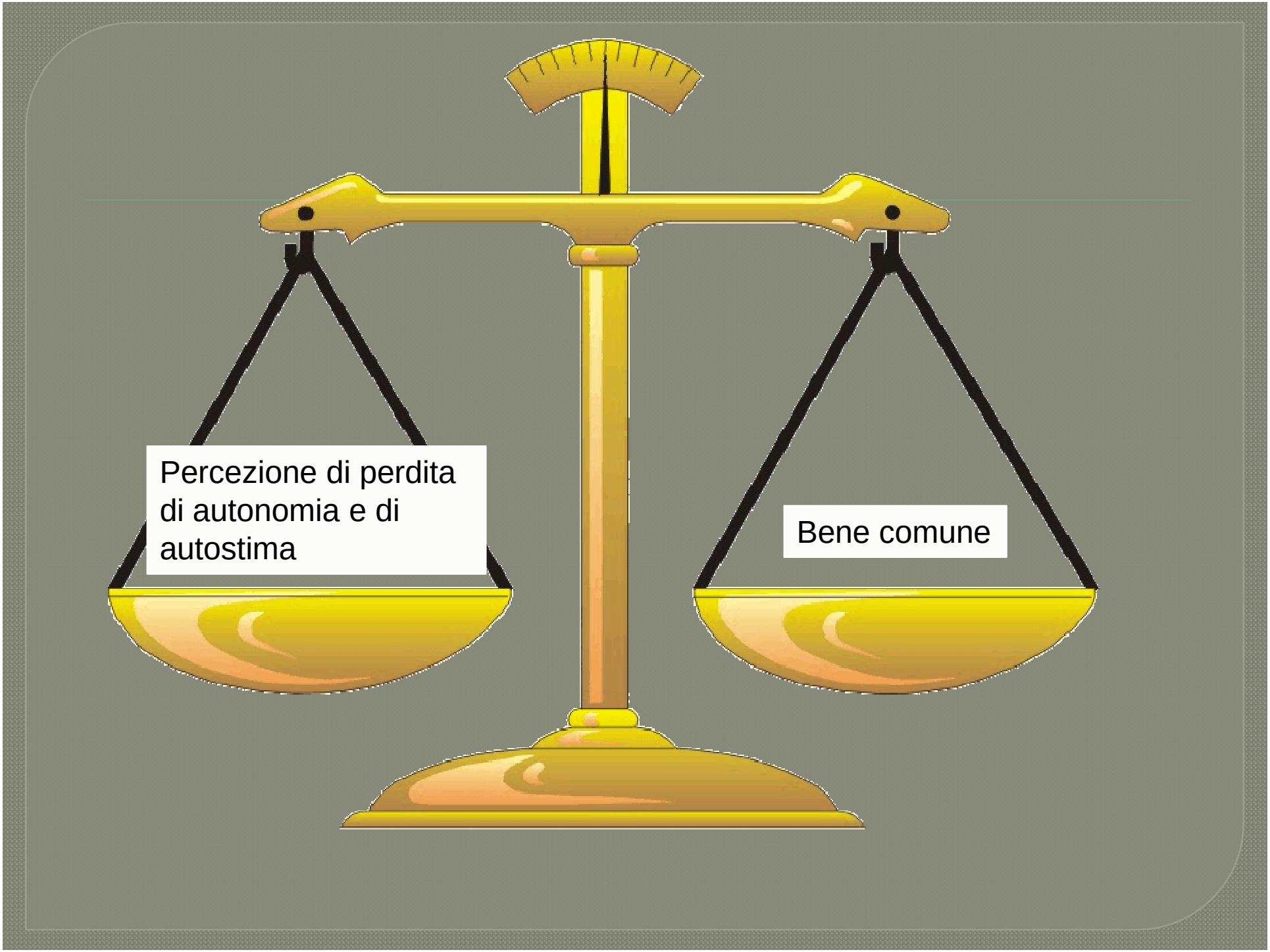
La valutazione delle patologie cardiovascolari nel rilascio del certificato di idoneità alla guida

Dott.ssa Valeria Carinci
UOS Aritmologia
Cardiologia – O. Maggiore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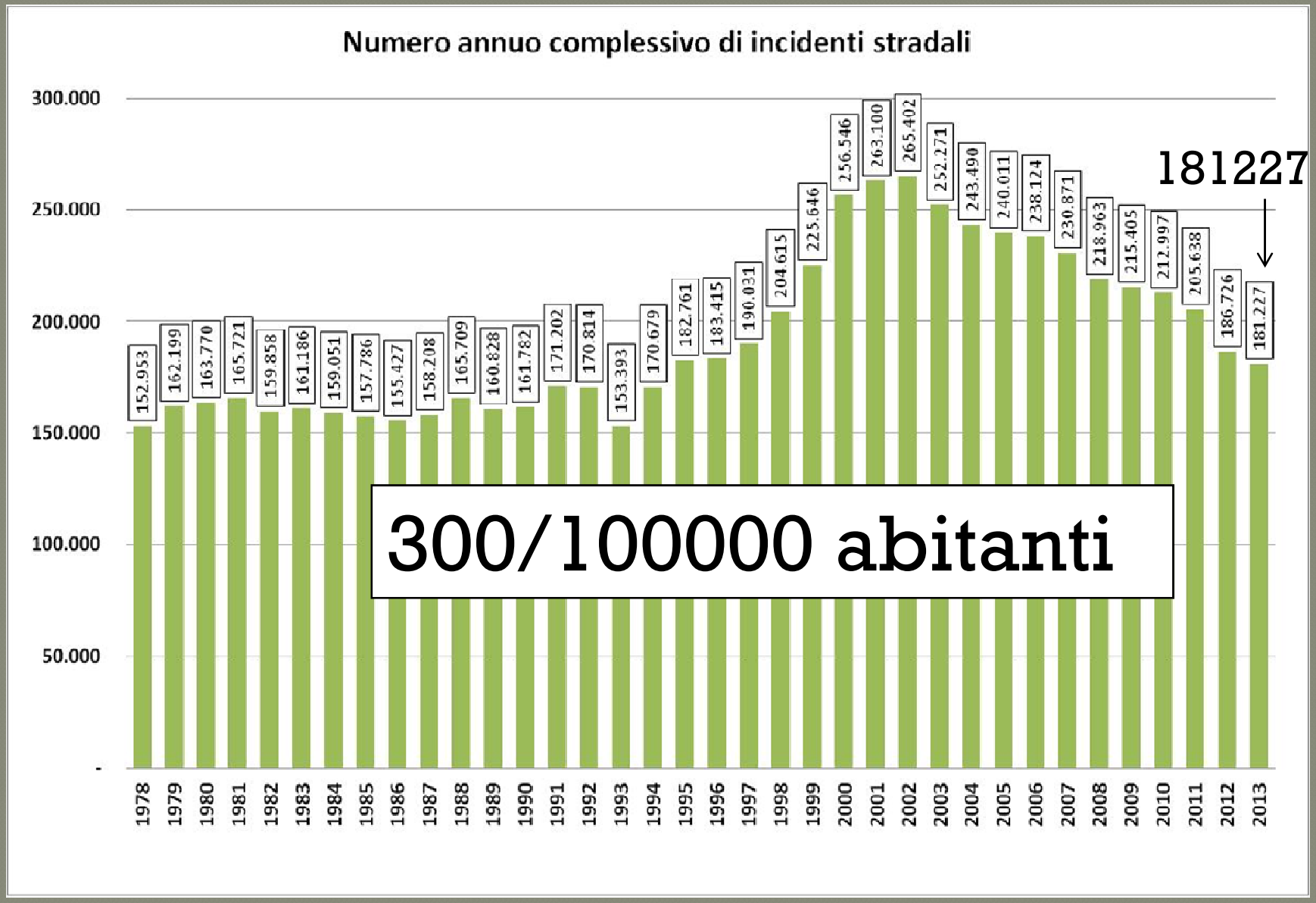
Bene comune


Numero annuo complessivo di incidenti stradali
300.000
250.000
200.000
150.000
100.000
50.000
-
152.953
162.199
163.770
165.721
159.858
161.186
159.051
157.786
155.427
158.208
165.709
160.828
161.782
171.202
170.814
153.393
170.679
182.761
183.415
190.031
204.615
225.646
256.546
263.100
265.402
252.271
243.490
240.011
238.124
230.871
218.963
215.405
212.997
205.638
186.726
181.227
1978
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1982
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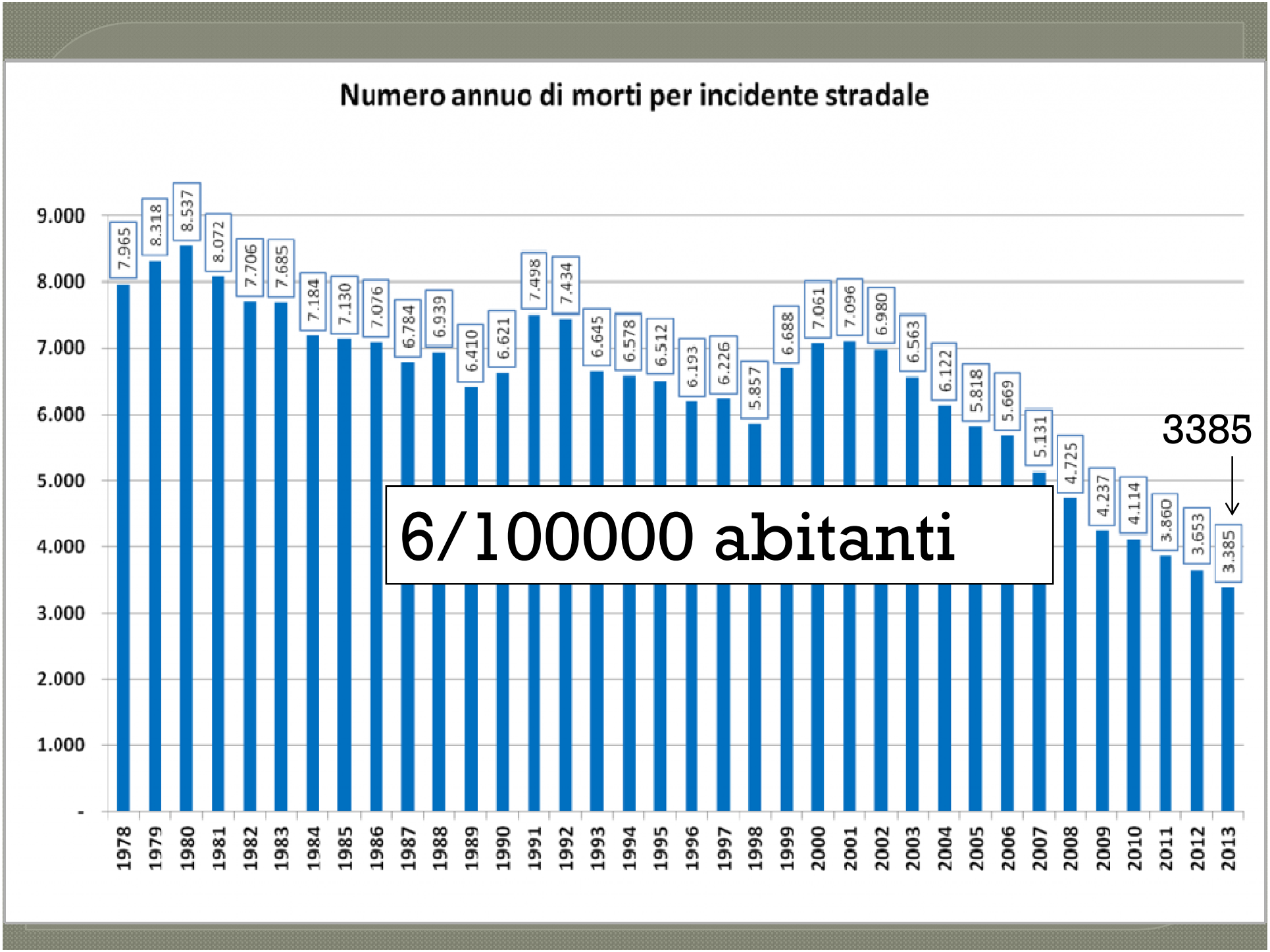
2013
181227
300/100000 abitanti


Numero annuo di morti per incidente stradale
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
-
7.965
8.318
8.537
8.072
7.706
7.685
7.184
7.130
7.076
6.784
6.939
6.410
6.621
7.498
7.434
6.645
6.578
6.512
6.193
6.226
5.857
6.688
7.061
7.096
6.980
6.563
6.122
5.818
5.669
5.131
4.725
4.237
4.114
3.860
3.653
3.385
1978
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2007
2008
2009
2010
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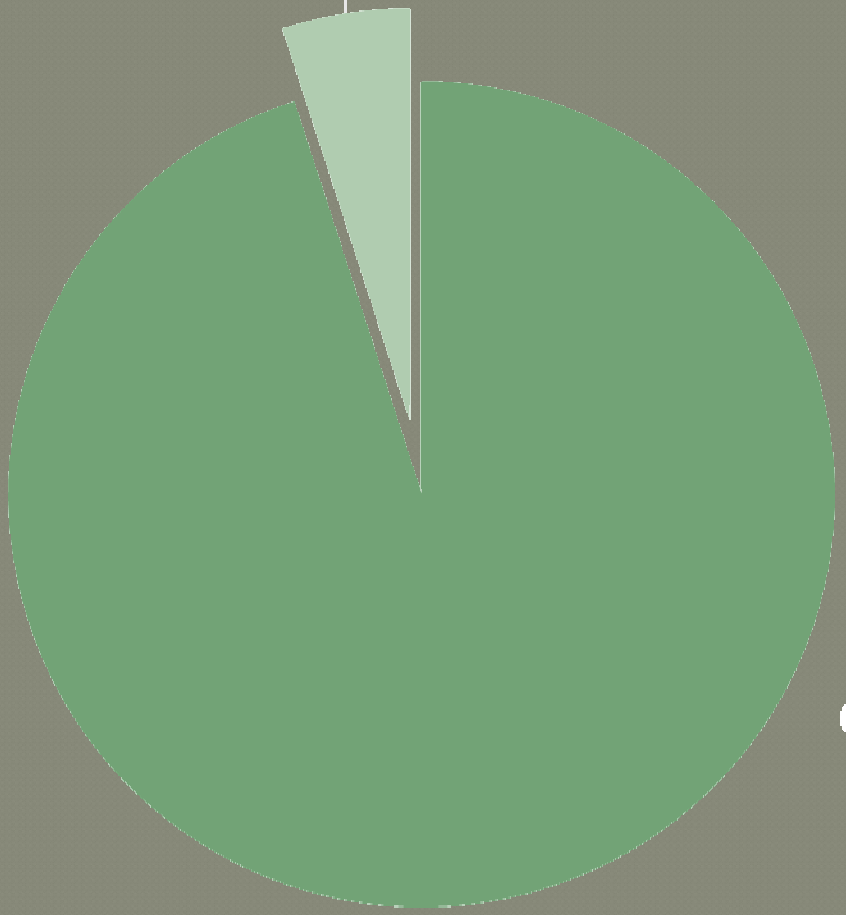
2012
2013
3385
6/100000 abitanti

Cause

Alcool e stupefacenti
> 80%

Altre cause
5%



Dati europei

- 1.5÷3.4% degli incidenti stradali sono attribuiti ad improvvise “perdita di conoscenza” del guidatore, ma solo lo 0.1% risulta attribuito a cause mediche **..... 1.5:1000 non fatali, 4:1000 incidenti fatali***
- All’interno di questa fascia, le cause di tipo cardiologico ricoprono una percentuale dell’ordine del 10 - 25%

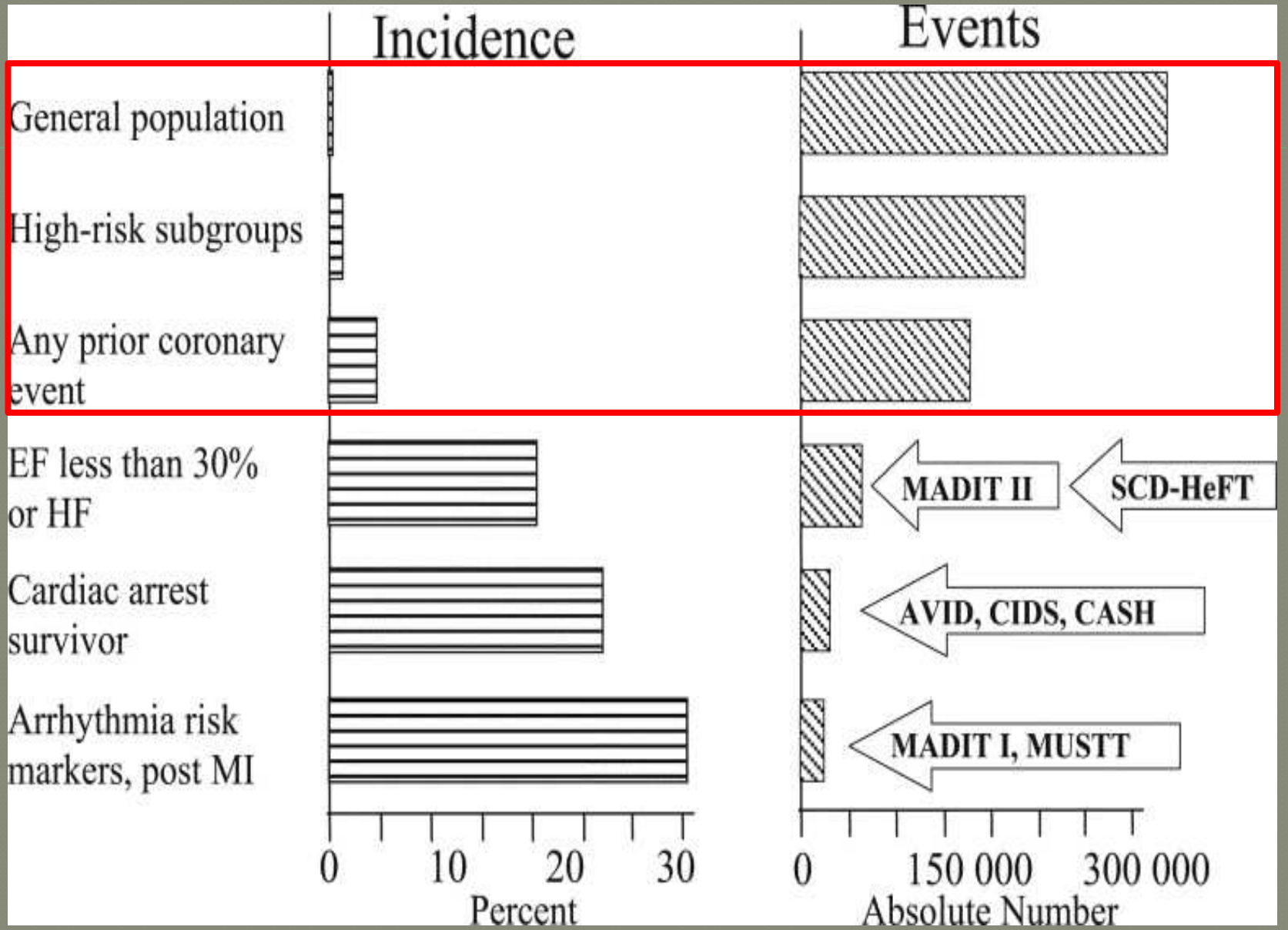
* Br Med J 1968

Table 3 Causes of 2000 road accidents involving collapse at wheel, based on reports by the police to driver vehicle licensing agency ***UK***

Epilepsy	38%
Blackouts	21%
Diabetes on insulin	18%
Heart condition	8%
Stroke	7%
Others	7%

76 % of accidents involved drivers with heart disease already diagnosed

Taylor J. In: Medical aspects of fitness to drive, Medical Commission on Accident Prevention. London UK, 1995.


Incidence
Events
General population
High-risk subgroups
Any prior coronary event
EF less than 30% or HF
Cardiac arrest survivor
Arrhythmia risk markers, post MI
MADIT II
SCD-HeFT
AVID, CIDS, CASH
MADIT I, MUSTT
0
10
20
30
Percent
0
150 000
300 000
Absolute Number

La legislazione italiana (Supplemento Ordinario alla GU n. 383 del 18/12/1992, Appendice II, Art. 320), per il rilascio o revoca della patente di guida per i pazienti cardiopatici, stabilisce che:

"La patente di guida non deve essere rilasciata né confermata ai candidati o conducenti colpiti da *un'affezione cardiovascolare ritenuta incompatibile con la sicurezza della guida.*
Nei casi dubbi, ovvero quando trattasi di affezioni cardiovascolari corrette da apposite protesi, il giudizio di idoneità verrà espresso dalla commissione medica locale che potrà avvalersi della consulenza di uno specialista appartenente alle strutture pubbliche."

European Heart Journal (1998) **19**, 1165–1177
Article No. hj981120

Task Force Report

Driving and heart disease

Prepared on behalf of the Task Force by M. C. Petch

Table 4 Policy aspects Group 1 drivers (fitness declaration)

	Legislation	Authority (Ministry)	Family doctor	Other	Licence duration
Austria		Transport	–	+	
Belgium	–	Transport	–	–	Indefinite
Denmark	+	Health	+	?	Until 70 years
Finland	+	Transport	+	+	Until 70 years
France	+	Transport	–	+	Indefinite
Greece					
Germany	–	Transport & Health	–	Eye check	Indefinite
Ireland		Environment	?	?	10–3 years
Italy	+	Health	+	+	10–3 years
Netherlands	–	Health	–	–	Indefinite
Norway	+	Health	+		Until 70 years
Portugal					
Spain	+	Interior	–	+	10– years
Switzerland	+	Interior	+		Until 70 years
UK	+	Transport	+	–	Until 70 years

– =no; + =yes; ?=varies; a gap indicates lack of data.

*Table 1 Road accident deaths per 100 000 population: by age group: 1995**

	Ages 0–15	Ages 16–20	Ages 21–24	Ages 25–64	Age 65+	All ages
United Kingdom	**2·7**	15·1	11·1	5·6	9·5	6·4
Great Britain	2·3	14·4	12·0	5·4	9·6	6·4
Austria	4·2	34·8	29·5	14·4	17·6	15·0
Belgium	4·8	25·7	30·2	14·4	14·8	14·3
Denmark	3·6	25·2	20·3	8·6	19·9	11·2
Finland	3·8	15·0	9·1	7·6	16·5	8·6
France	4·1	26·1	33·7	15·7	17·5	15·3
Germany	3·7	32·1	26·8	10·6	12·1	11·6
Former East Germany	5·9	56·6	48·0	17·7	15·0	18·9
Former West Germany	3·1	25·5	22·3	8·9	11·5	9·9
Greece	**5·0**	30·3	43·3	21·7	25·3	21·1
Irish Republic	3·3	16·3	32·2	10·5	16·2	12·1
Italy	3·0	21·0	19·5	10·9	17·4	12·3
Luxembourg	**3·9**	38·1	27·3	21·0	18·2	18·5
Netherlands	3·3	15·7	14·2	7·6	15·2	8·6
Portugal	9·2	48·1	53·0	28·5	30·8	28·8
Spain	3·7	21·0	25·2	15·6	14·3	14·7
Sweden	2·0	9·8	9·0	5·9	11·4	6·5
Hungary	4·2	16·6	21·3	17·5	18·8	15·6
Iceland						
Norway	2·7	17·2	14·8	5·2	11·5	7·0
Switzerland	3·8	16·9	21·9	8·4	16·0	9·9
Turkey						
Australia	**3·6**	22·8	20·4	9·7	17·4	10·9
Canada				**10·5**	15·2	11·1
Japan	2·3	18·5	14·0	7·9	22·0	10·1
New Zealand	7·4	32·4	36·5	14·9	13·4	16·2
USA	5·4	31·9	29·8	15·8	20·8	15·9

*Figures in bold are for 1994.

Tables 1–3 provided by courtesy of Department of Transport, 2 Marsham Street, London SW18 3EB.

drivers are defined. Group 1 comprises drivers of ordinary motor cycles, cars, and other small vehicles with or without a trailer (A, B, B+E, and sub-categories A_1 and B_1). Group 2 includes drivers of vehicles over 3·5 metric tonnes (3500 k) or passenger carrying vehicles exceeding eight seats excluding the driver (C, C+E, D, D+E, C_1, C_1+E_1, D_1, D_1+E). Drivers of taxi cabs, small ambulances, and other vehicles form an intermediate category between the ordinary private driver, and the vocational driver. This group has an intermediate risk. On the one

Table 5 A person should be advised not to drive if he/she suffers or has suffered from any of the following conditions[1]

Diagnosis	Disqualifying criteria Group 1	Disqualifying criteria Group 2
Angina pectoris (stable or unstable)	Symptoms at rest or at the wheel; driving may be recommended once symptoms are controlled	Any history of and/or treatment for. If asymptomatic and requiring no anti-anginal medication (re-)licensing may be permitted subject to regular exercise evaluation.[2]
Myocardial infarction, CABG, PTCA	None, once clinical recovery has taken place, usually 4 weeks following MI or CABG, and one week following PTCA	Not permitted until at least 6 weeks has elapsed from the index event. If asymptomatic and requiring no anti-anginal medication (re-)licensing ed subject to regular exercise evaluation.[2]
Peripheral vascular disease	None[3]	ciated coronary heart disease must be identified and above).
Hypertension	None[3,4]	essure at rest consistently exceeds 180 systolic and/or stolic.[4]
Aortic aneurysm including Marfan syndrome	None[3]	erse diameter >5.0 cm. (Re-)licensing may be permitted actory repair and provided that there is no other ondition.
Heart failure	Symptoms symptoms	symptoms. If asymptomatic (re-)licensing may be ided that the LV ejection fraction is >0.40 on contrast r equivalent), there is no disqualifying arrhythmia (see exercise requirements[2] can be satisfied.
Heart and/or lung transplantation (See Heart Failure)	Persisting If asympt exercise[2] a	
Valve disease including valve surgery	None[3]	toms. c (re-)licensing may be permitted provided that there is alifying condition and no history of systemic embolism. oral or recurrent systemic embolism whilst receiving treatment (re-)licensing is not permitted.
Congenital heart disease	None[3]	r severe disorder. s and those which have been successfully corrected may be (re-)licensed provided that there is no other disqualifying condition
Hypertrophic cardiomyopathy	None[3]	Persisting symptoms. If asymptomatic (re-)licensing may be recommended for those with no family history of sudden cardiomyopathic death, no ventricular tachycardia on ambulatory electrocardiography and no hypotension on exercise testing.

ARITMIE

Table 1 Guidelines for medical fitness to drive in patients with arrhythmias or treatment for arrhythmia from UK, USA, and Europe

Cardiovascular disorder	Licence type	Driving restriction UK	Driving restriction USA	Driving restriction Europe
Narrow complex tachycardia, AF, atrial flutter	Class 1	Cease if causes incapacity Recommence if controlled for 4 weeks	Total restriction if symptomatic Recommence if controlled for 1 month	Restricted if disabling symptoms such as cerebral impairment Not permitted while disabling symptoms present. Relicencing once: (a) arrhythmia controlled (b) LVEF >40% (c) no VT on Holter (d) meets exercise requirements
	Class 2	Disqualified if incapacity Recommence if: (a) controlled for 3 months (b) LVEF >40%	As above	
Broad complex tachycardia (NSVT/VT/VF)	Class 1	As for narrow complex tachycardia	NSVT asymptomatic: none NSVT symptomatic: 3 months restriction post therapy VT: 6 months restriction post-therapy, 3 months if idiopathic VT with no symptoms VF: 6 months restriction post-therapy	As for narrow complex tachycardia
	Class 2	As for narrow complex tachycardia	NSVT asymptomatic: none NSVT symptomatic: 6 months restriction post therapy VT: total restriction unless idiopathic VT asymptomatic (6 months restriction post therapy) VF: disqualifies after ICD insertion	As for narrow complex tachycardia
Bradyarrhythmias	Class 1	As for NCT/BCT	No restriction if asymptomatic Restriction if syncope occurs	As for NCT/BCT
	Class 2	As for NCT/BCT	As above	As for NCT/BCT
Successful Catheter ablation	Class 1	Recommence after 2 days	Can drive after recovery from procedure	No restriction
	Class 2	If incapacitating arrhythmia, cease for 6 weeks after ablation Otherwise, recommence after 2 weeks	As above	Relicencing after 6 weeks

Banning et al. Eur Heart J 2013

SINCOPE O PERDITA DI CONOSCENZA

For public safety, the risk of syncope-mediated driving accidents (0.8% per year) appeared to be substantially less than in young (16–24 years) and in elderly drivers (high risk accident groups).

Data suggest that the risk of vehicle accident in patients with a history of syncope is not different from that of the general population of drivers without syncope

Syncope While Driving
Clinical Characteristics, Causes, and Prognosis
Sorajja D et al. Circulation 2009

Characteristic	Group		
	Driving (n=381)	Nondriving (n=3496)	*P*
Mean (SD) age, y	55.8 (18.4)	56.8 (23.8)	0.01
Men, n (%)	248 (65.1)	1656 (47.4)	<0.001
Past medical history, n (%)			
Any cardiovascular disease*	101 (26.5)	734 (21.0)	0.01
Hypertension	124 (32.5)	1119 (32.0)	0.83
Syncope	313 (82.2)	2724 (77.9)	0.06
Syncope within 1 mo	171 (44.9)	1679 (48.0)	0.24
Coronary artery disease	51 (13.4)	360 (10.3)	0.06
Cancer	49 (12.9)	377 (10.8)	0.22
Thyroid disease	28 (7.3)	255 (7.3)	0.97
History of MI	27 (7.1)	318 (9.1)	0.19
COPD	23 (6.0)	150 (4.3)	0.12
Diabetes mellitus	23 (6.0)	231 (6.6)	0.67
Stroke	17 (4.5)	85 (2.4)	0.02
Dilated cardiomyopathy	14 (3.7)	97 (2.8)	0.32
Pacemaker implantation	13 (3.4)	113 (3.2)	0.85
Valvular heart disease	12 (3.1)	62 (1.8)	0.06
Congestive heart failure	11 (2.9)	90 (2.6)	0.72
Seizure	8 (2.1)	49 (1.4)	0.28
Carotid artery stenosis	8 (2.1)	71 (2.0)	0.93
Chronic renal insufficiency	6 (1.6)	58 (1.7)	0.90

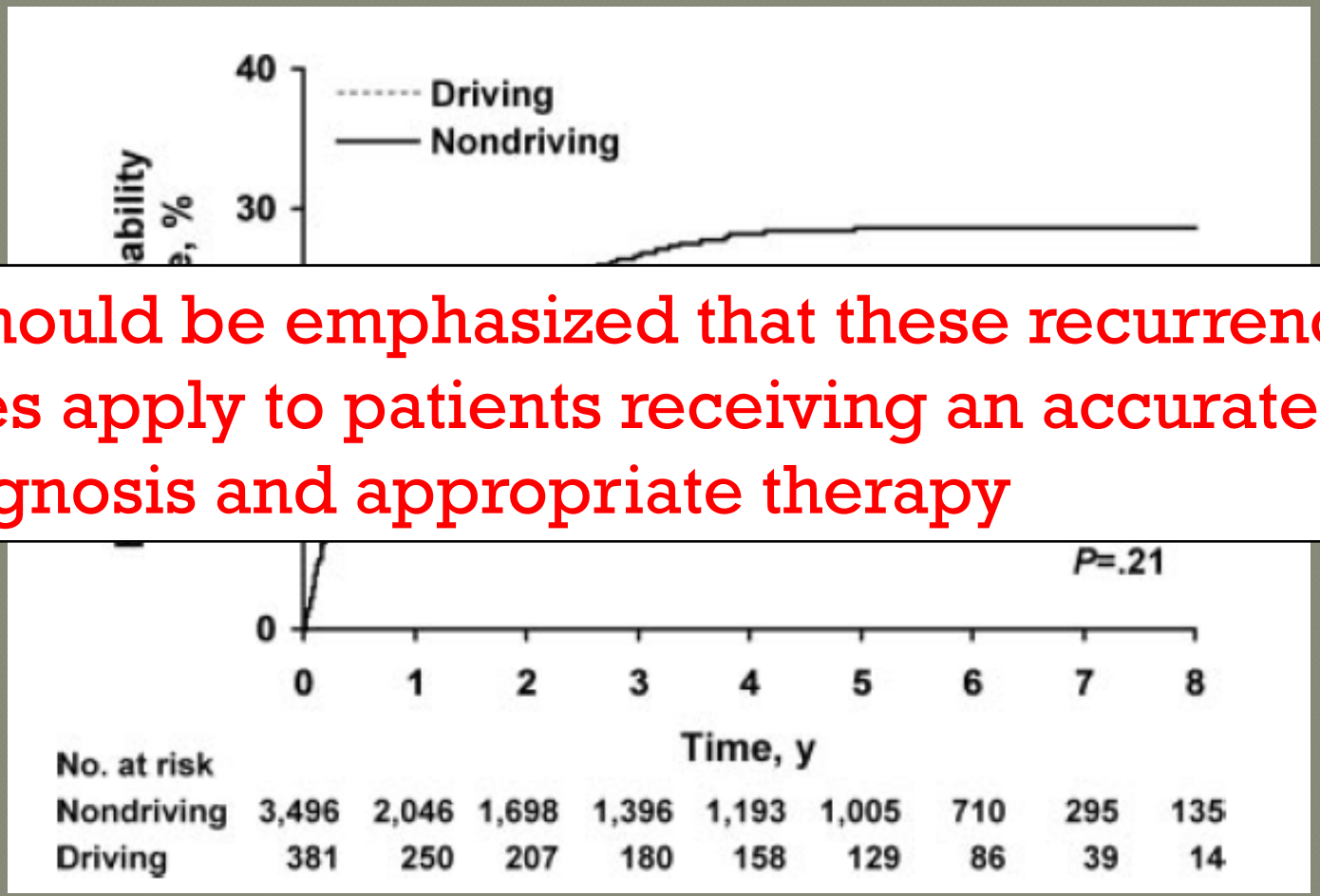
- 3877 patients
- 381 (9.8%) had syncope while driving (driving group).

Cause of Syncope	Group,* n (%)		P
	Driving (n=381)	Nondriving (n=3496)	
Neurally mediated	142 (37.3)	1247 (35.7)	0.54
Bradyarrhythmia	25 (6.6)	221 (6.3)	0.86
Supraventricular tachyarrhythmia	8 (2.1)	71 (2.0)	0.93
Ventricular tachyarrhythmia	20 (5.2)	130 (3.7)	0.14
Structural cardiopulmonary disease	1 (0.3)	9 (0.3)	0.99
Cerebrovascular disease	14 (3.7)	100 (2.9)	0.37
Carotid sinus hypersensitivity	12 (3.1)	100 (2.9)	0.75
Orthostatic intolerance	18 (4.7)	223 (6.4)	0.20
Others	87 (22.8)	1044 (29.9)	0.004
Unknown	90 (23.6)	622 (17.8)	0.005

Reflex syncope (37%) or cardiac arrhythmia (12%)

Among the driving group, syncope recurred in 72 patients, 35 of whom (48.6%) had recurrence < 6 months after the initial evaluation.

Among patients with syncope while driving, the actuarial recurrence of syncope while driving was 0.7% at 6 months and 1.1% at 12 months during follow-up.



It should be emphasized that these recurrence rates apply to patients receiving an accurate diagnosis and appropriate therapy

European Heart Journal (2004) **25**, 2054–2072

ELSEVIER

EUROPEAN SOCIETY OF CARDIOLOGY

ESC Guidelines

Guidelines on Management (Diagnosis and Treatment) of Syncope — Update 2004☆ Executive Summary

The Task Force on Syncope, European Society of Cardiology☆☆

Task Force members: Michele Brignole, Chairperson* (Italy), Paolo Alboni (Italy), David G. Benditt (USA), Lennart Bergfeldt (Sweden), Jean-Jacques Blanc (France), Poul Erik Bloch Thomsen (Denmark), J. Gert van Dijk (The Netherlands); Adam Fitzpatrick (UK), Stefan Hohnloser (Germany), Jan Janousek (Czech Republic), Wishwa Kapoor (USA), Rose Anne Kenny (UK), Piotr Kulakowski (Poland), Giulio Masotti (Italy)[1], Angel Moya (Spain), Antonio Raviele (Italy), Richard Sutton (UK), George Theodorakis (Greece), Andrea Ungar[1] (Italy), Wouter Wieling (The Netherlands)

EVIDENZA C

Diagnosis	Group 1 (private drivers)		Group 2 (vocational drivers)	
	Disqualifying criteria according to 1998 ESC document	Modified disqualifying criteria according to 2004 Syncope Task Force	Disqualifying criteria according to 1998 ESC document	Modified disqualifying criteria according to 2004 Syncope Task Force
Neurally-mediated syncope				
(a) Vasovagal:				
– Single/mild	No restrictions	No change	Specialist evaluation including neurological review	No restriction unless it occurred during high risk activity ([a])
– Severe ([a])	Until symptoms controlled	No change	Until symptoms controlled. (Re-) licensing after three months and possibly negative tilt-test; careful follow-up mandatory	Permanent restriction unless effective treatment has been established
(b) Carotid sinus:				
– Single/mild	No restrictions	No change	No restrictions	No restriction unless it occurred during high risk activity ([a])
– Severe ([a])	Until symptoms controlled	No change	Until symptoms controlled	Permanent restriction unless effective treatment has been established
(c) Situational:				
– Single/mild	No restrictions	No restrictions	No restrictions	No restriction unless it occurred during high risk activity ([a])
– Severe ([a])	–	Until appropriate therapy is established	–	Permanent restriction unless effective treatment has been established
Syncope of uncertain cause				
– Single/mild	–	No restrictions unless it occurred during high risk activity ([a])	–	Until diagnosis and appropriate therapy is established
– Severe ([a])	In case of severe syncope until cause identified especially in patients with heart disease or at least 3 months without symptoms before (re-)licensing	Until diagnosis and appropriate therapy is established	Requires specialist evaluation including a neurological review if appropriate. Following unexplained syncope, provocation testing and investigation for arrhythmia must be implemented, especially also in patients with heart disease. If the results are satisfactory (re-)licensing may be permitted after 3 months. Careful follow-up is mandatory	Until diagnosis and appropriate therapy is established

[a] Neurally-mediated syncope is defined as severe if it is very frequent, or occurring during the prosecution of a 'high risk' activity, or recurrent or unpredictable in ''high risk'' patients (see part 3,

Guidelines for the diagnosis and management of syncope (version 2009). The Task Force for the Diagnosis and Management of Syncope of the European Society of Cardiology (ESC)

Recommendations concerning driving in patients with syncope

Diagnosis	Group 1 (private drivers)	Group 2 (professional drivers)
Cardiac arrhythmias		
Cardiac arrhythmia, medical treatment	After successful treatment is established	After successful treatment is established
Pacemaker implant	After 1 week	After appropriate function is established
Successful catheter ablation	After successful treatment is established	After long-term success is confirmed
ICD implant	In general low risk, restriction according current recommendations	Permanent restriction
Reflex syncope		
Single/mild	No restrictions	No restriction unless it occurred during high risk activity*
Recurrent and severe*	After symptoms are controlled	Permanent restriction unless effective treatment has been established
Unexplained syncope		
	No restrictions unless absence of prodrome, occurrence during driving, or presence of severe structural heart disease	After diagnosis and appropriate therapy is established

Group 1: private drivers of motorcycles, cars and other small vehicles with and without a trailer; Group 2: professional drivers of vehicles over 3.5 tons or passenger-carrying vehicles exceeding eight seats excluding the driver. Drivers of taxicabs, small ambulances, and other vehicles form an intermediate category between the ordinary private driver and the vocational driver and should follow local legislation.

*Neurally mediated syncope is defined as severe if it is very frequent, or occurring during the prosecution of a 'high risk' activity, or recurrent or unpredictable in 'high risk' patients (see Part 3, treatment).

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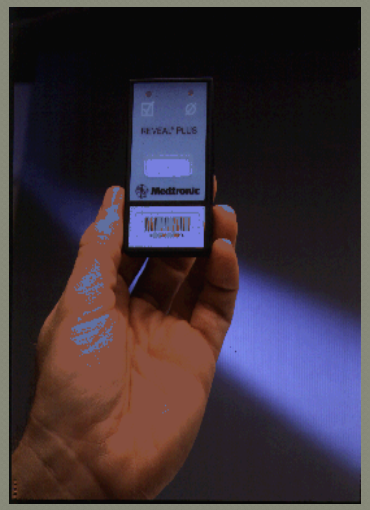

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- Defibrillatori (ICD)

- In Italia secondo il registro Nazionale AIAC sono stati impiantati nel 2011 circa 800 PM e 290 ICD / milione di abitanti (ordine di grandezza intorno 50000 /anno). 56% degli ICD erano in profilassi primaria

- Età media 80-82 anni per i PM, 70 anni per gli ICD

IS-1
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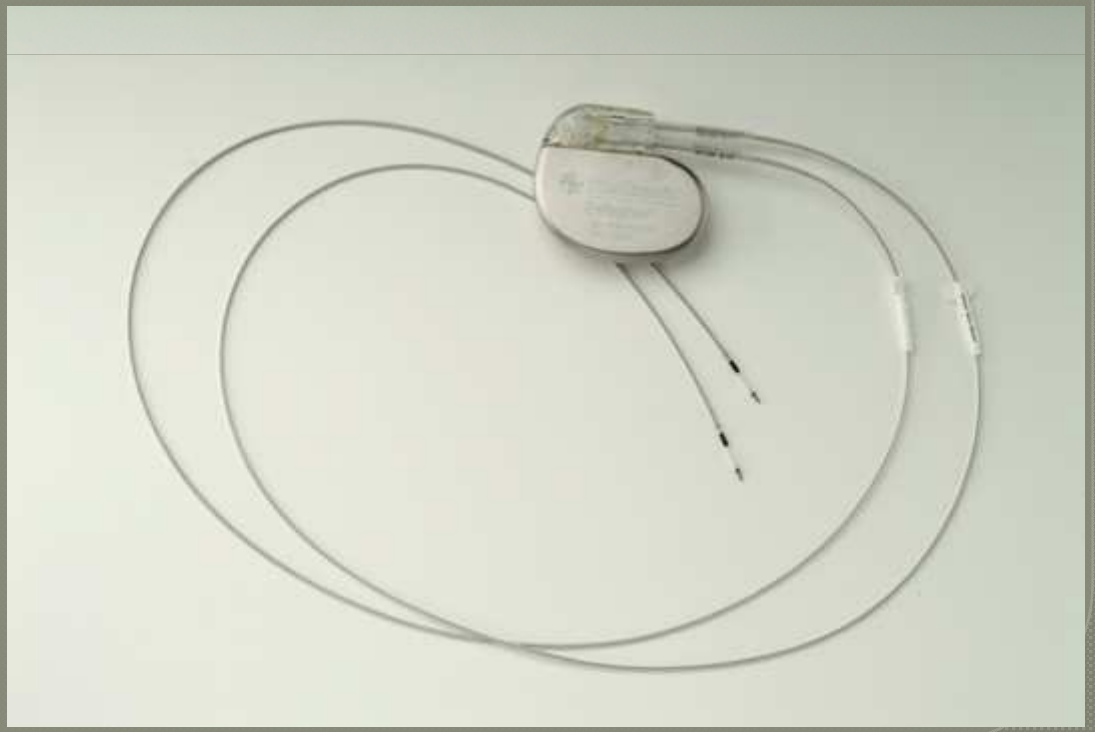

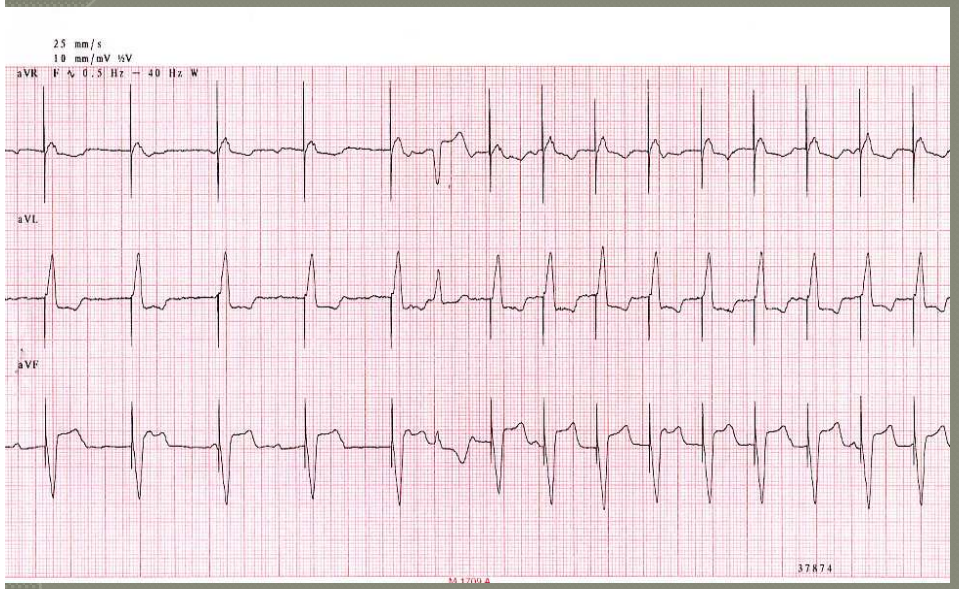
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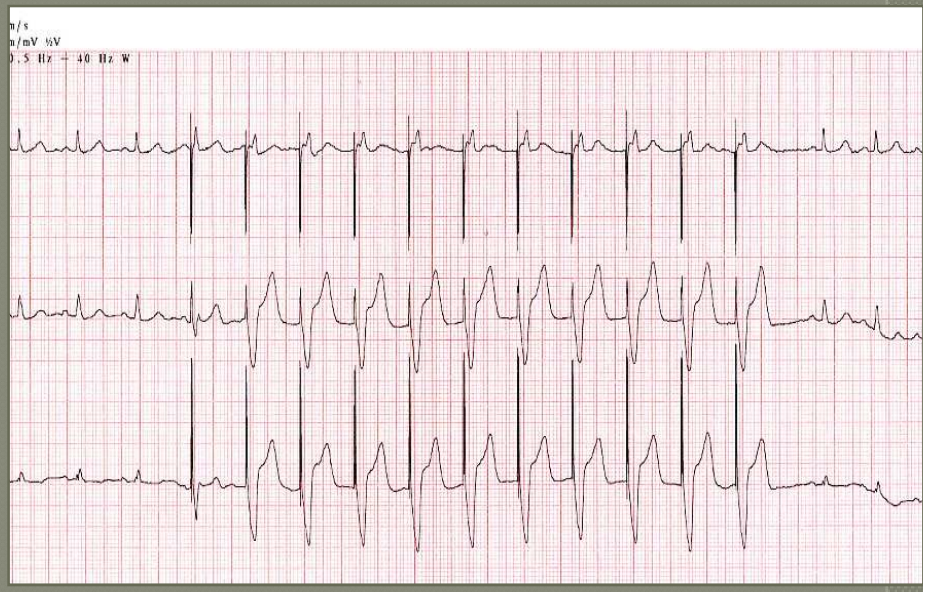
aVF
37874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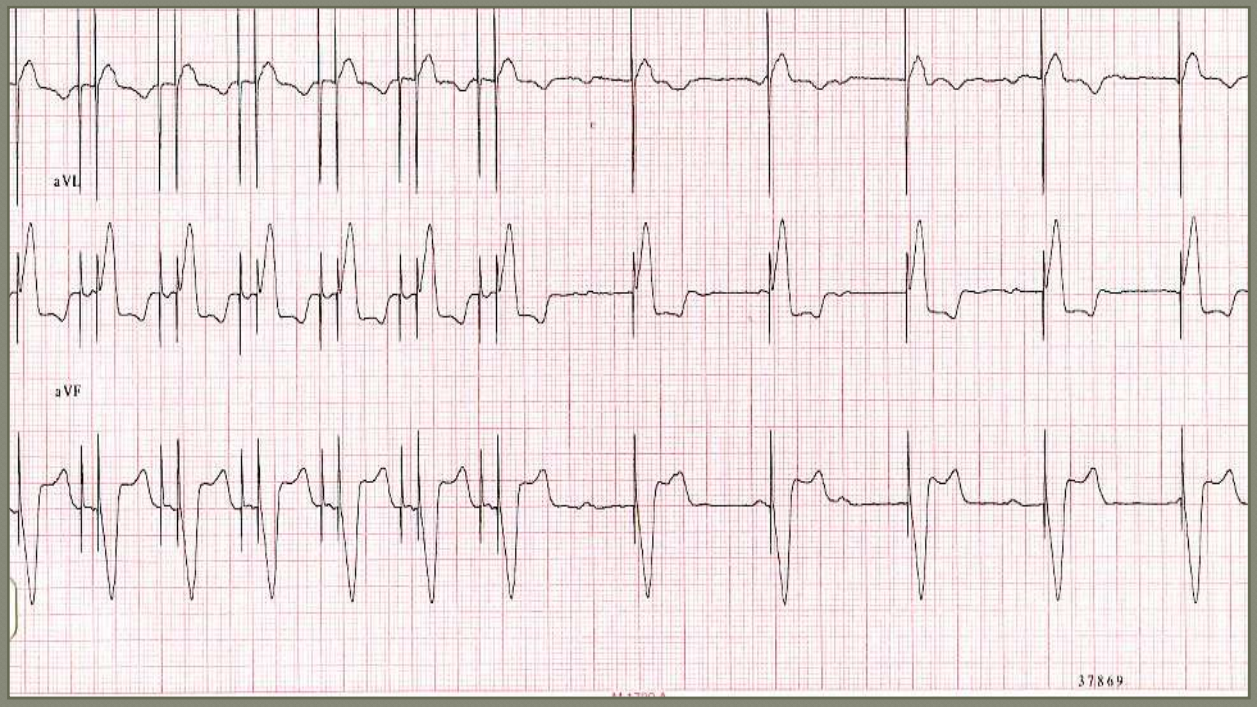
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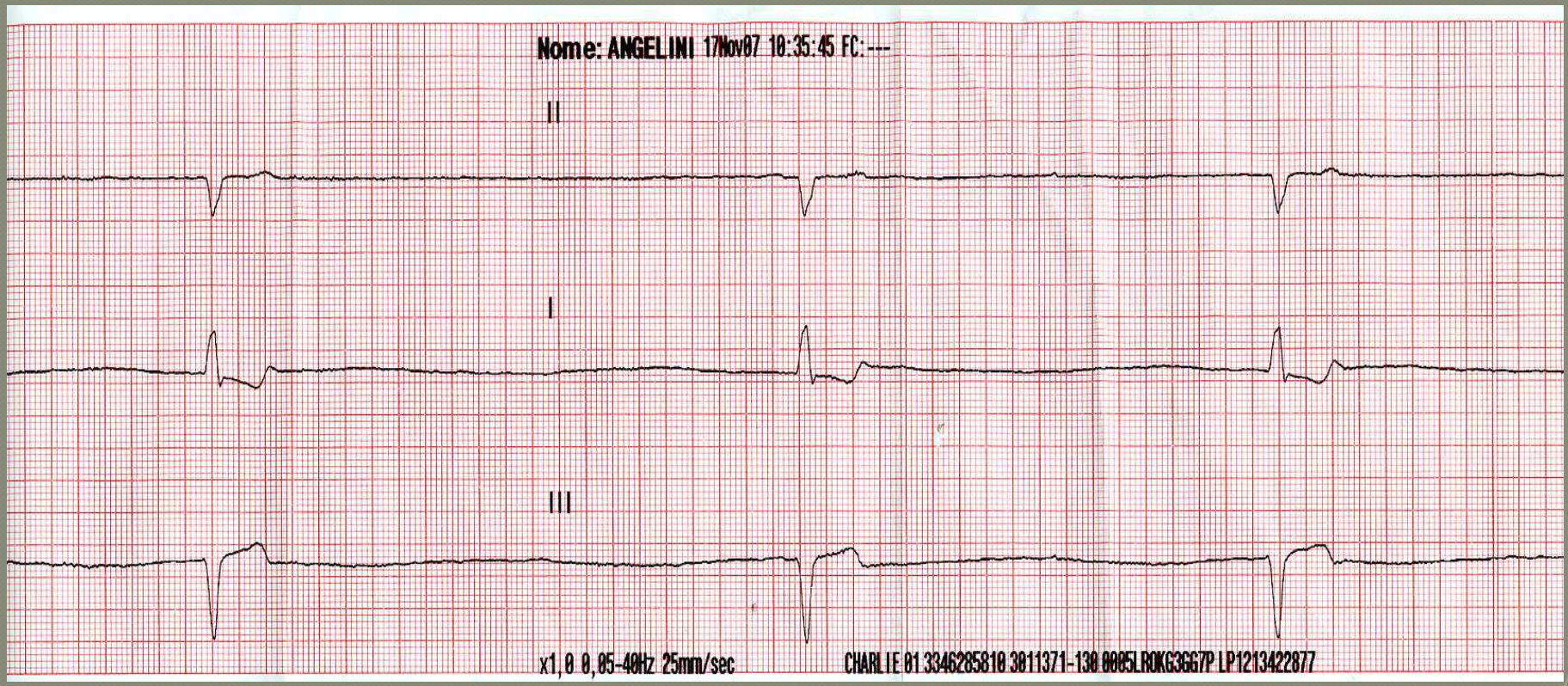
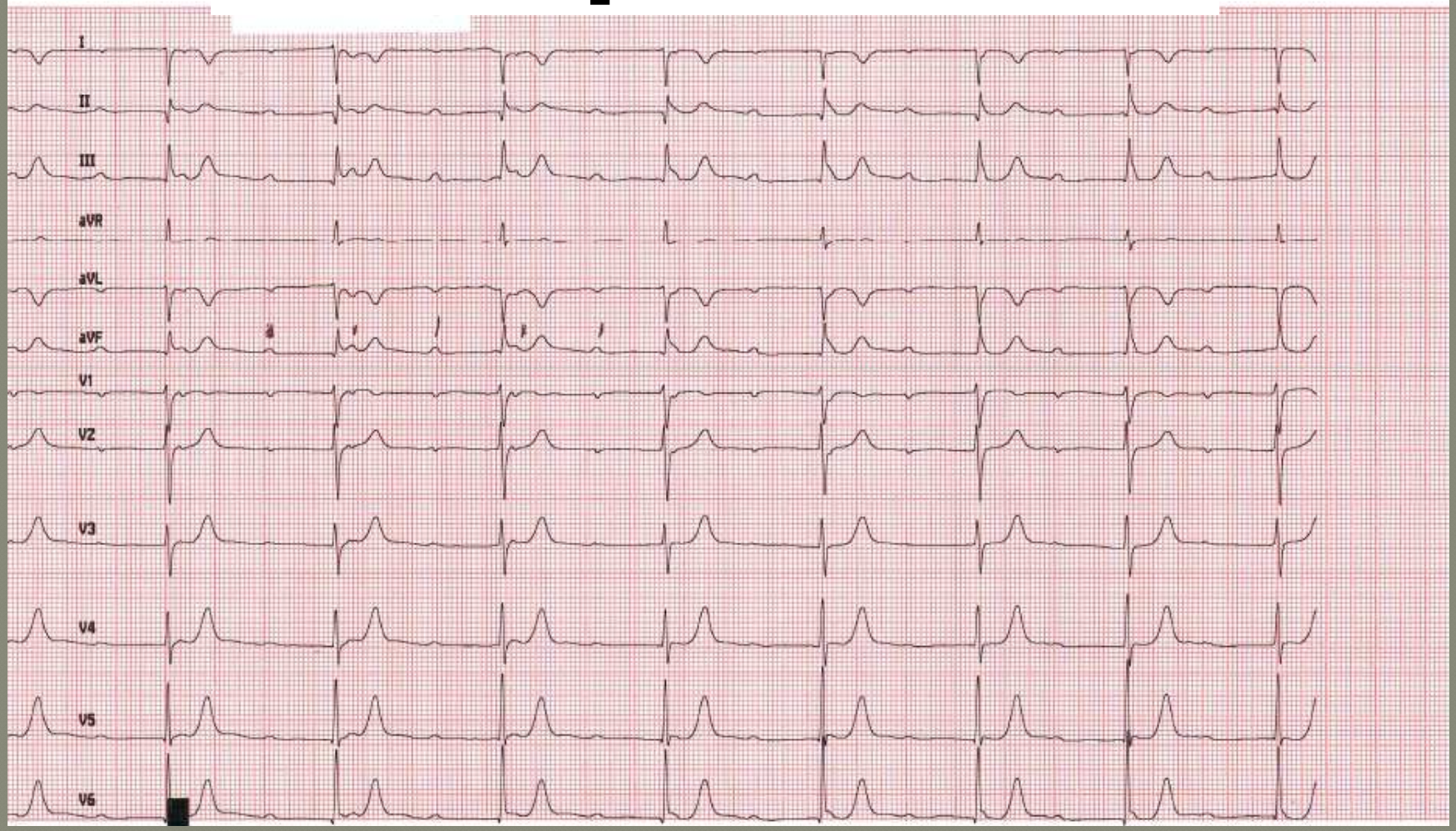
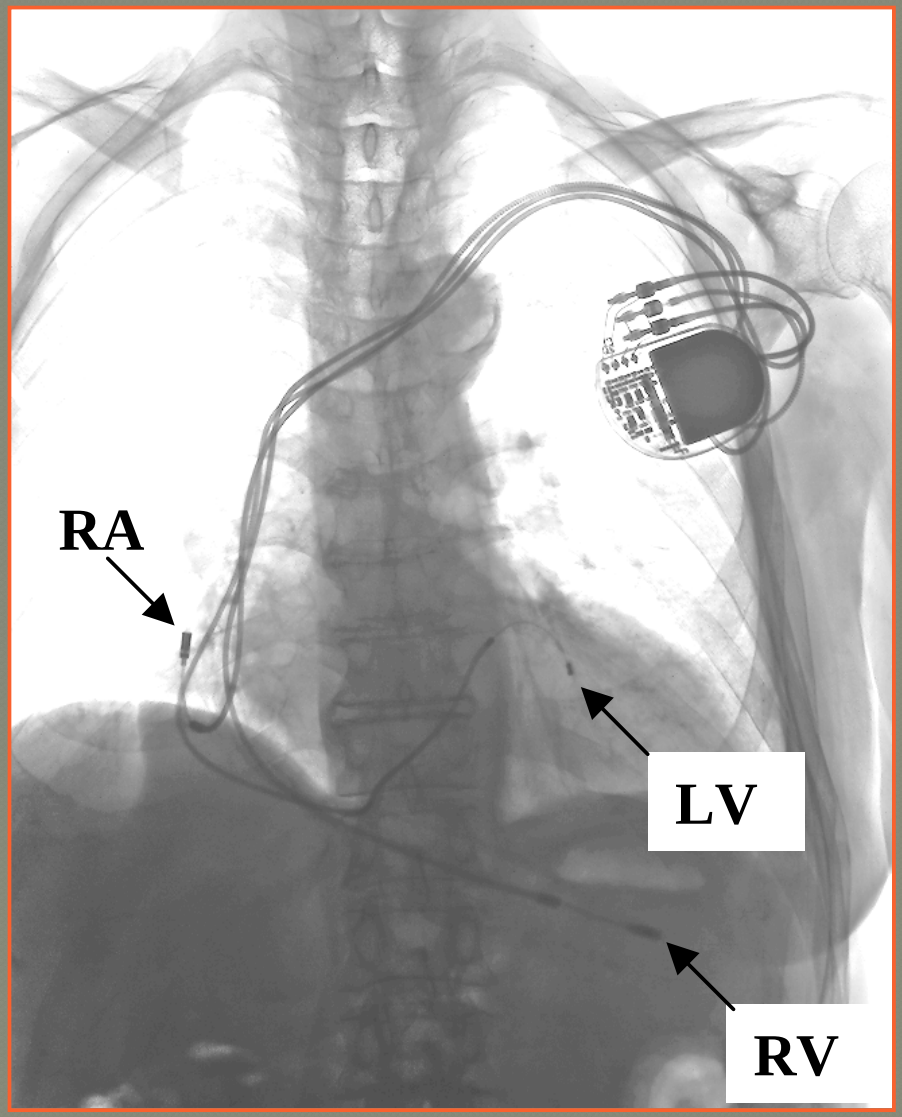
PM dipendente

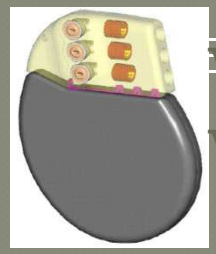


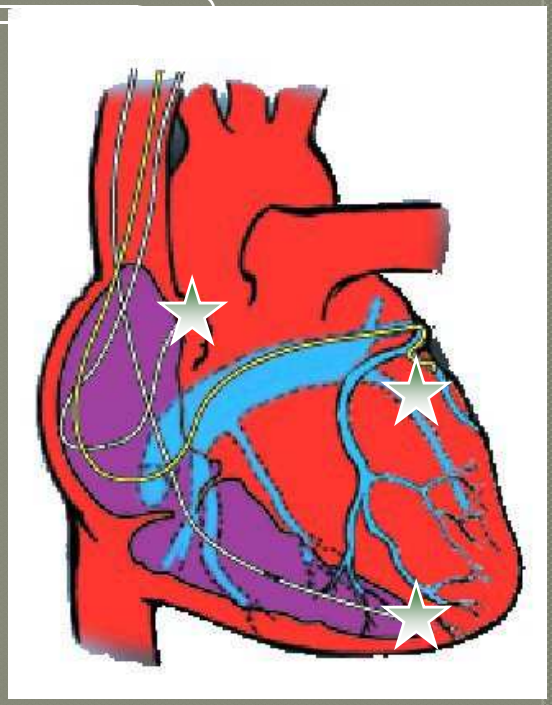
NON PM dipendente



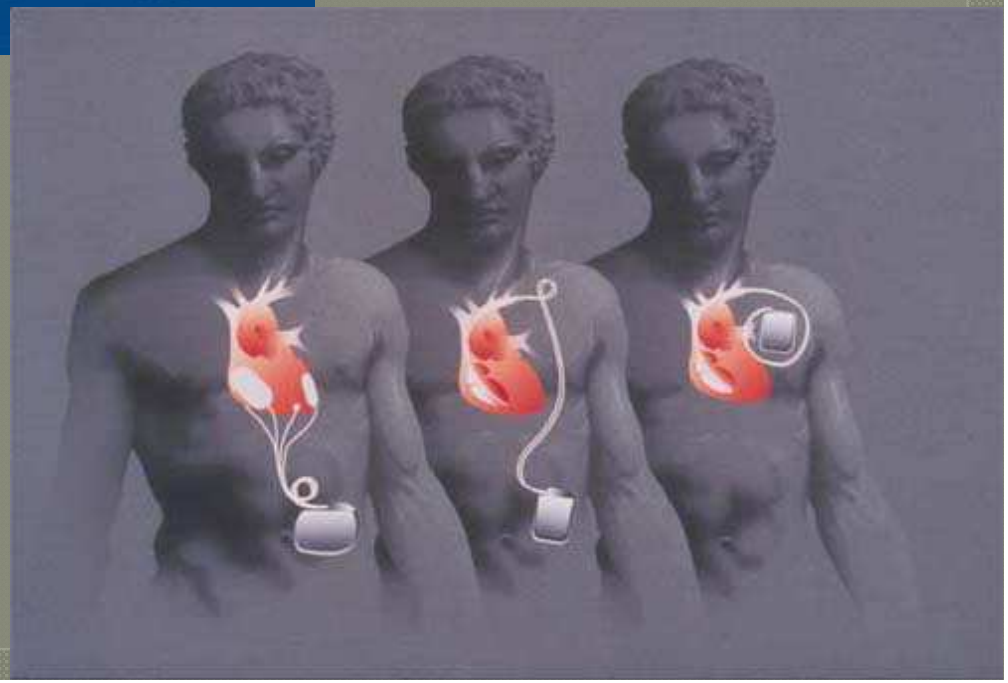
PM Biventricolare (tricamerale)

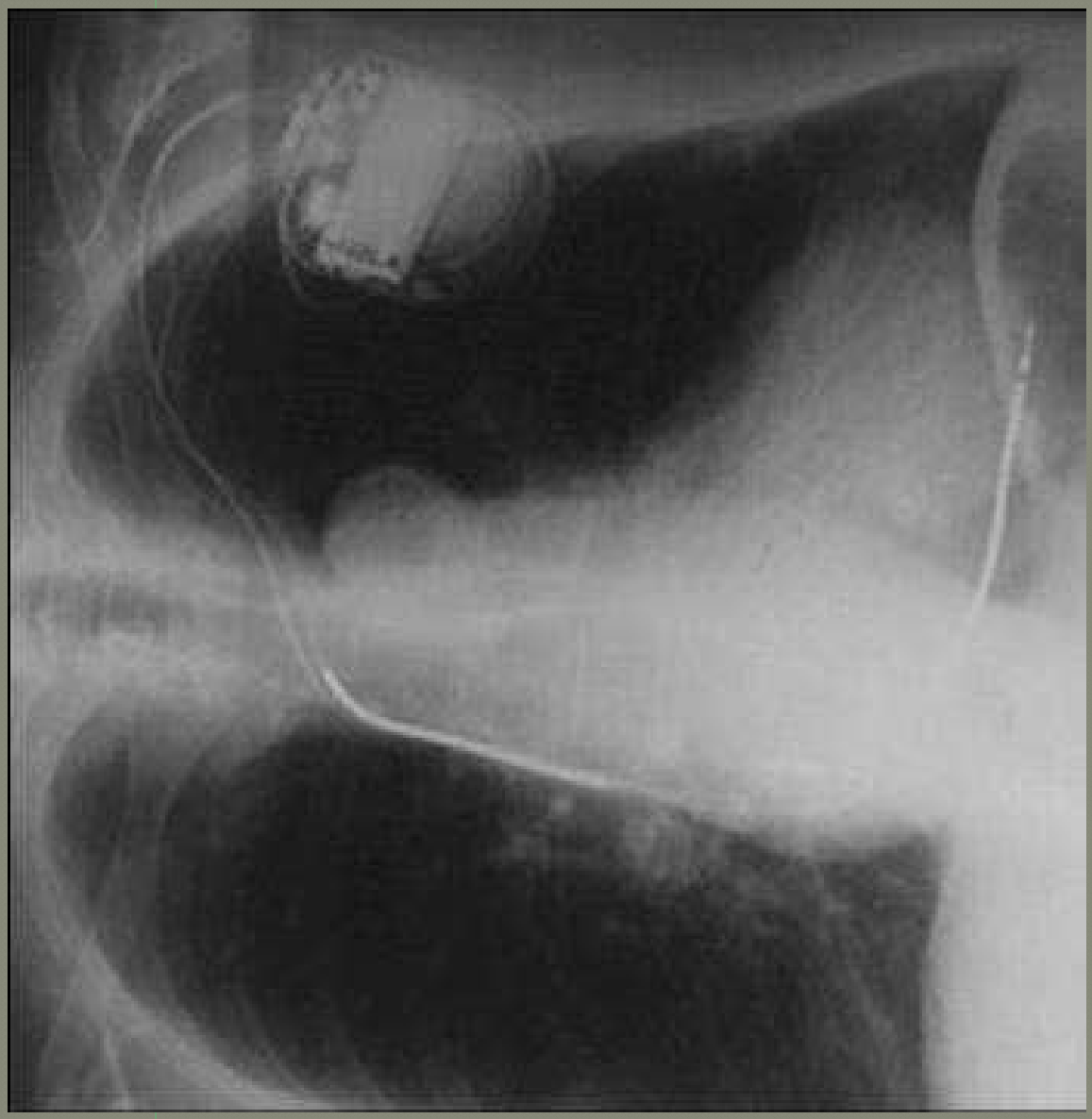


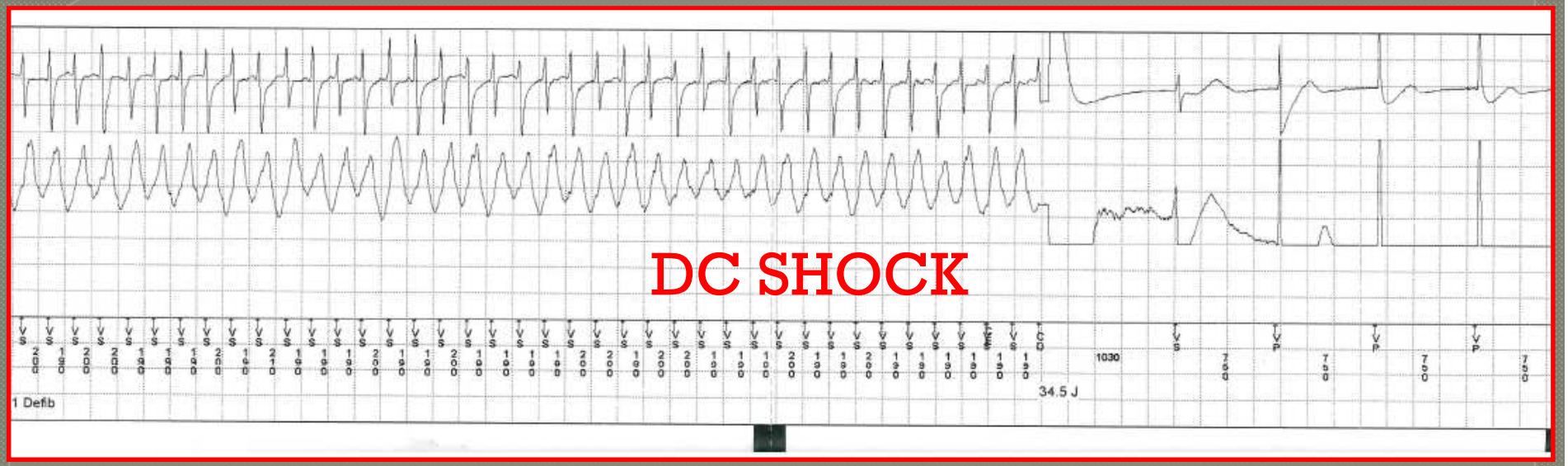


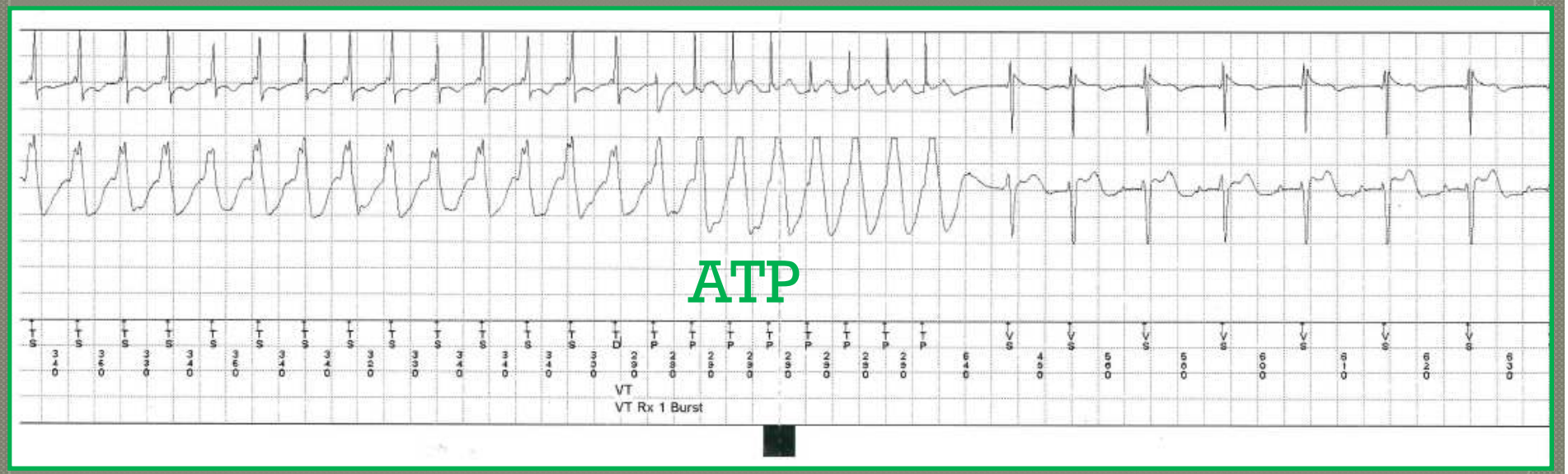


Medtronic Implantable Defibrillators (1989-2000)

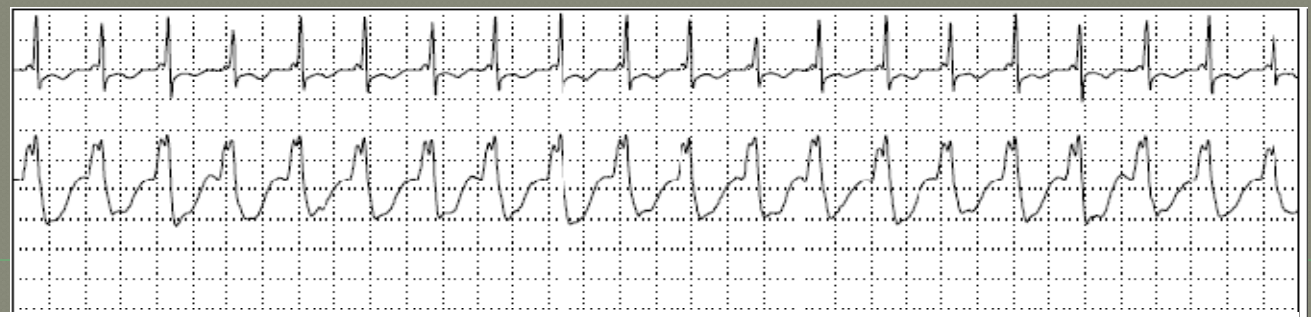




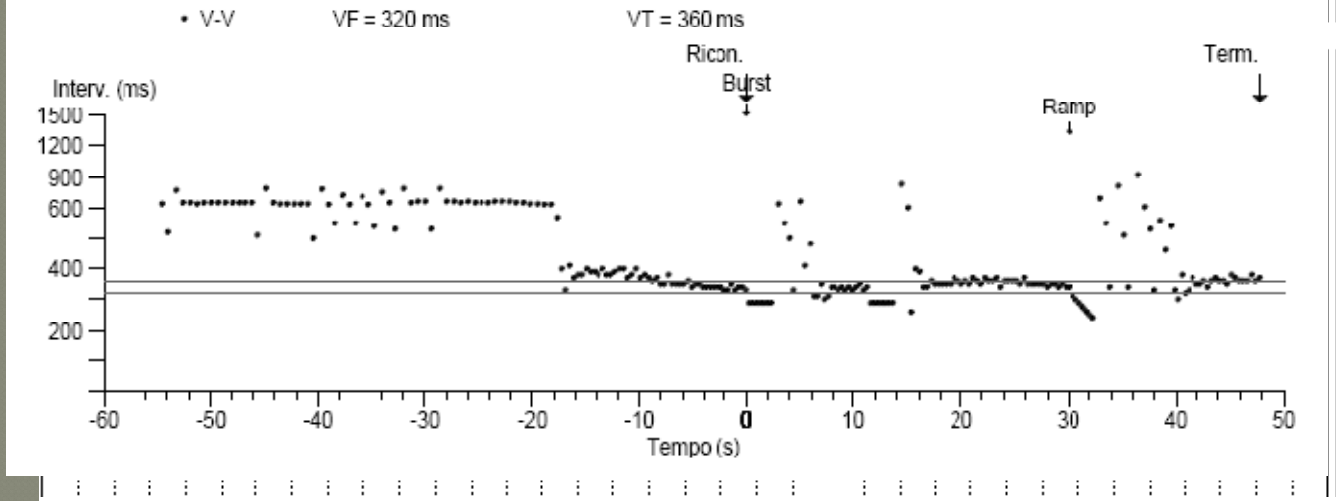


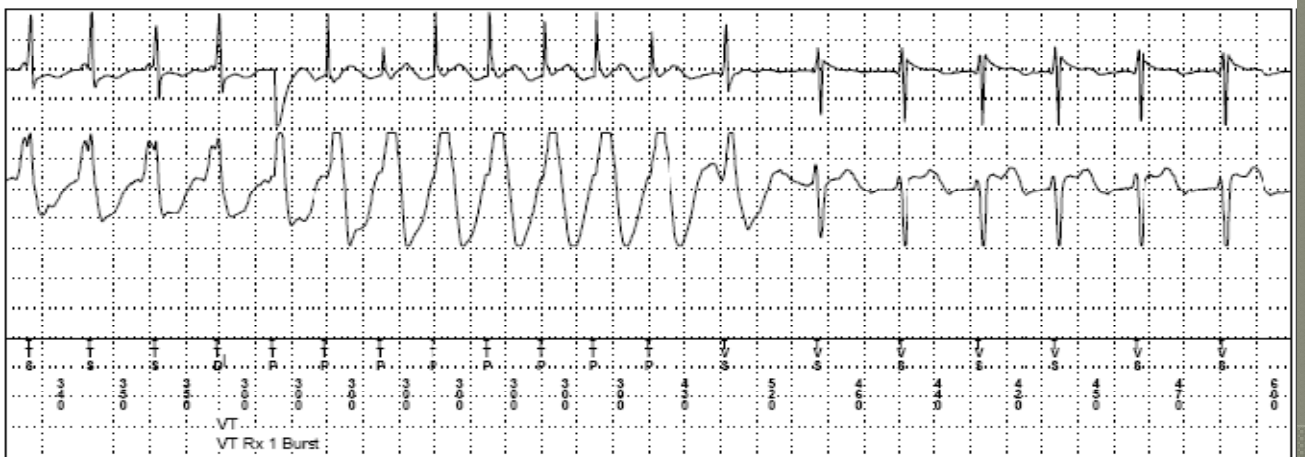


0.2% syncope, 0.4% pre-syncope. Europace 2012



Tipo	ATP Seq	shock	Succ.	ID#	Data	Ora hh:mm	Durata hh:mm:ss	Media min-¹ V	Max min-¹ V	Attività all' Insorgenza
VT	3		Si	40	27-Dic-2013	18:03	:49	182	182	Riposo



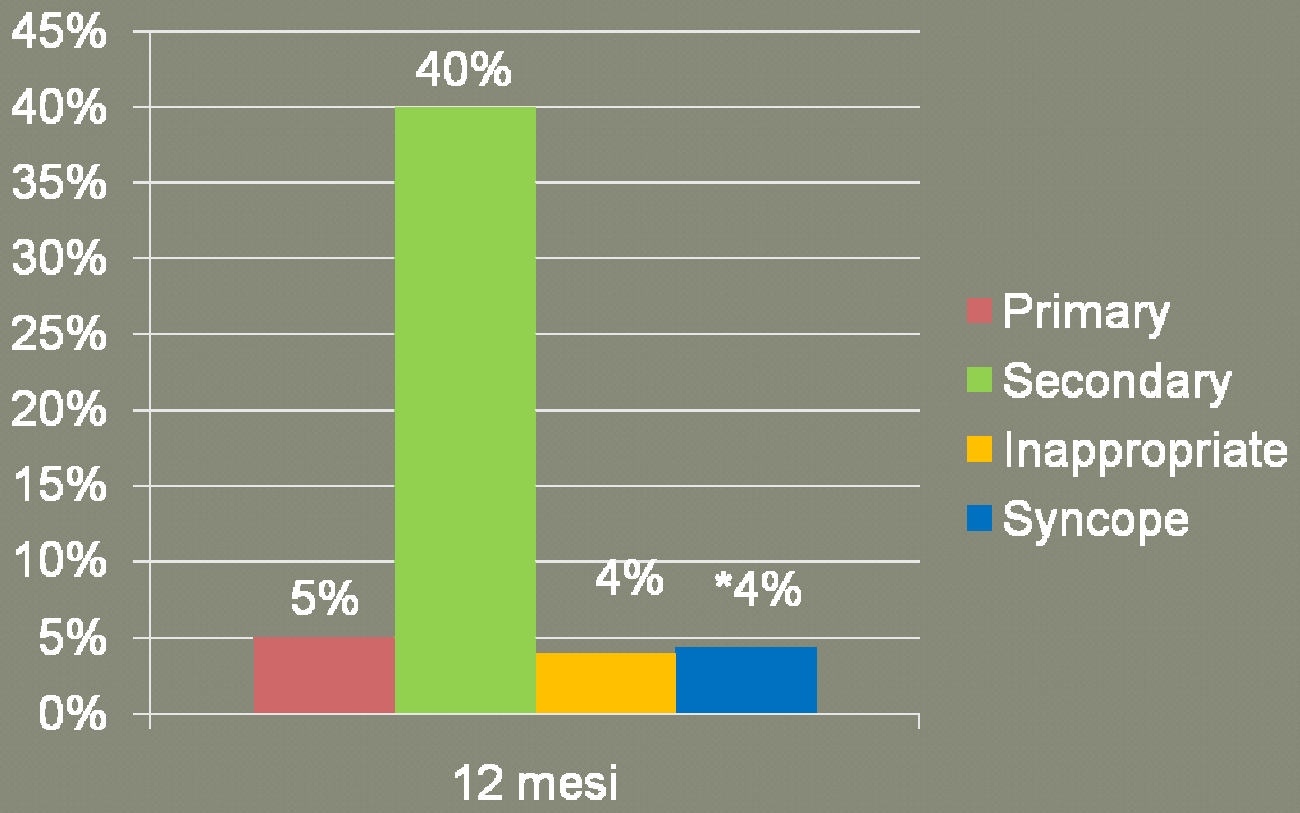


ICD

PROFILASSI PRIMARIA: Impianto di un defibrillatore per il rischio teorico di sviluppare aritmie maligne (sono soggetti "sani"!!!)

PROFILASSI SECONDARIA: Impianto di un defibrillatore per curare un'aritmia maligna già verificatasi (Fibrillazione ventricolare, Tachicardia ventricolare, sincope in cardiopatia strutturale)

Annual incidence of ICD shocks



Patients with an initial ICD therapy had an increased likelihood of another ICD therapy within one year

Motor Vehicle Accidents in Patients With an Implantable Cardioverter-Defibrillator

ANNE B. CURTIS, MD, FACC, JAMIE B. CONTI, MD, FACC, KELLY J. TUCKER, MD, PAUL S. KUBILIS, MS, ROBERTA E. REILLY, BA, DAVID A. WOODARD, MD

Gainesville, Florida

The estimated fatality rate for patients with a defibrillator, 7.5/100,000 patient-years, is significantly lower than that for the general population (18.4/100,000 patient-years, $p < 0.05$).

Only 10.5% (30 of 286) of all defibrillator discharges during driving resulted in accidents

States involved in cardioverter-defibrillator implantation and follow-up. Physicians were questioned about numbers of patients followed up, numbers of fatal and nonfatal accidents, physician recommendations to patients about driving and knowledge of state driving laws.

Results. Surveys were returned by 452 physicians (61%). A total of 30 motor vehicle accidents related to shocks from implantable defibrillators were reported by 25 physicians over a 12-year period from 1980 to 1992. Of these, nine were fatal accidents involving eight patients with a defibrillator and one passenger in a car

discharges during driving resulted in accidents. Regarding physician recommendations, most physicians (58.1%) ask their patients to wait a mean (±SD) of 7.3 ± 3.4 months after implantation or a shock before driving again.

Conclusions. The motor vehicle accident rate caused by discharge from an implantable cardioverter-defibrillator is low. Although restricting driving for a short period of time after implantation may be appropriate, excessive restrictions or a total ban on driving appears to be unwarranted.

(J Am Coll Cardiol 1995;26:180–4)

RESUMPTION OF DRIVING AFTER LIFE-THREATENING VENTRICULAR TACHYARRHYTHMIA – AVID Trial
NEJM 2001

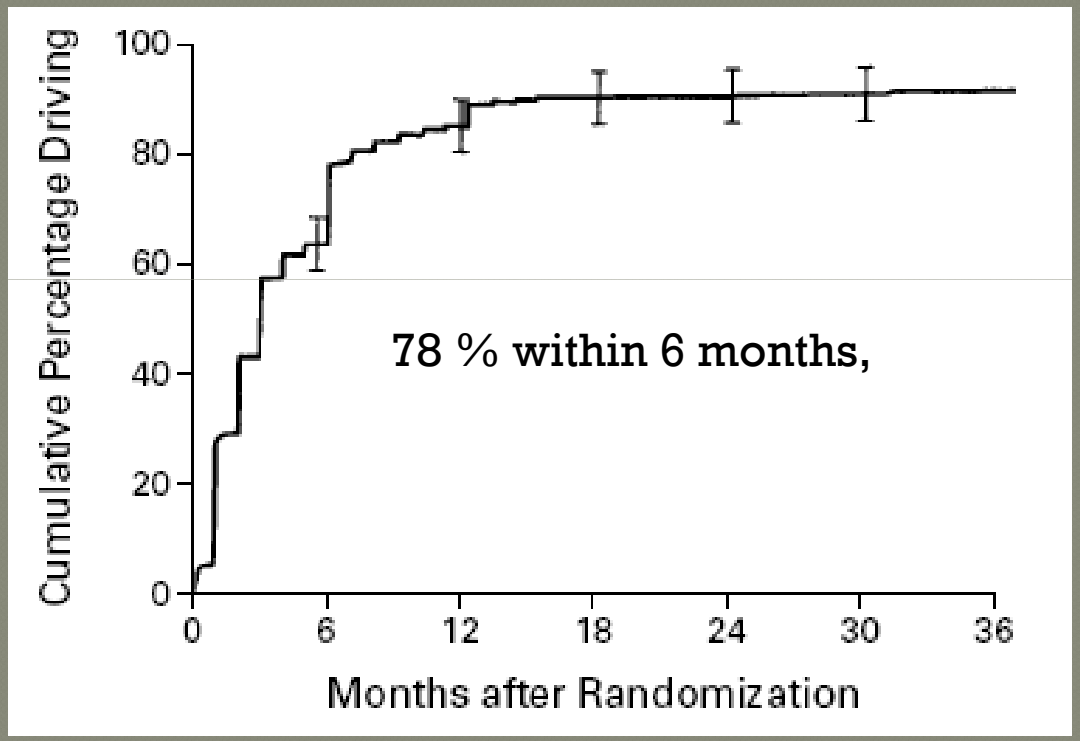


TABLE 3. SYMPTOMS OF POSSIBLE ARRHYTHMIA THAT OCCURRED WHILE PATIENTS WERE DRIVING.*

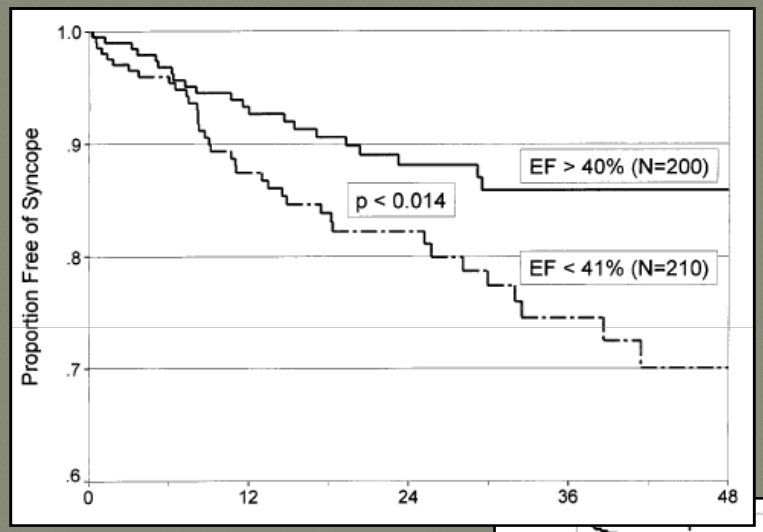
No. of Events	Syncope (N=557)	Dizziness or Palpitations Necessitating Stopping (N=556)	Dizziness or Palpitations Not Necessitating Stopping (N=554)
		number of patients (percent)	
0	546 (98)	495 (89)	430 (78)
1	7 (1)	27 (5)	43 (8)
2	1 (<1)	12 (2)	21 (4)
>2	3 (1)	22 (4)	60 (11)

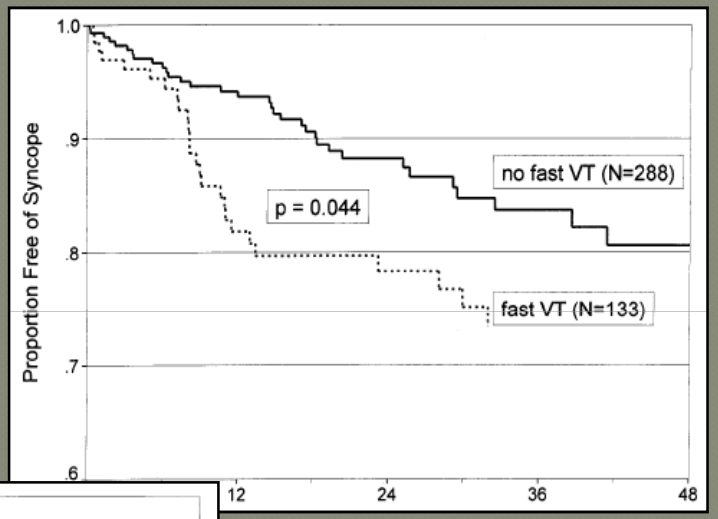
1619 patient-years of follow-up after the resumption of driving **(3.4 %/year).** Only 11 % of these accidents were preceded by symptoms of possible arrhythmia **(0.4 percent per patient-year).**

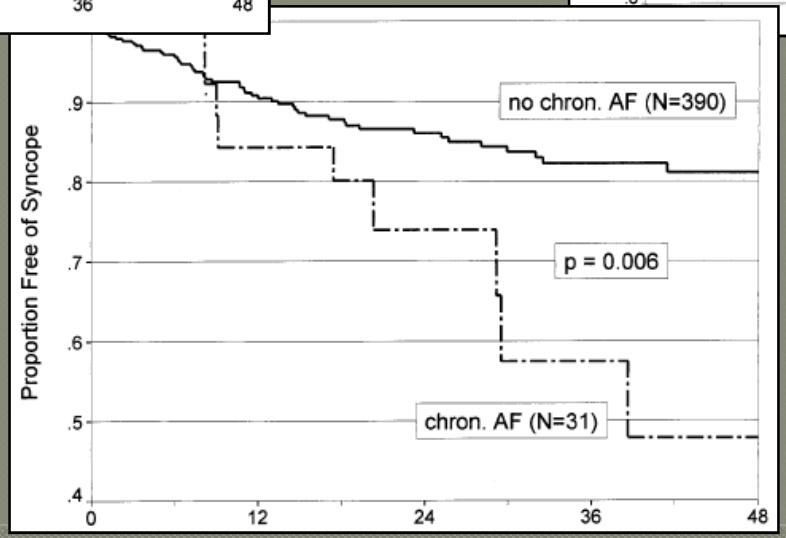
The annual accident rate of 7.1 percent in the general driving population of the United States.

Syncope in patients with an implantable cardioverter-defibrillator: incidence, prediction and implications for driving restrictions JACC 1998

421 pts. Sec Prevention Syncope 90%-85%-81% at 1, 2 and 3 year







Driving and Implantable Cardioverter-Defibrillator Shocks for Ventricular Arrhythmias

Results From the TOVA Study

- 80% of all participants and 75% of those within 6 months of their implantation reported driving a car at least once per week.

- The absolute risk of ICD shock for VT/VF within 1 h of driving was estimated to be 1 episode per 25,116 person-hours spent driving.
- The ICD shocks for VT/VF were twice as likely to occur within 1 h of driving a car as compared with other times (relative risk [RR] 2.24, 95% confidence interval [CI] 1.57 to 3.18).
- This risk occurred primarily during the 30-min period after driving (RR 4.46, 95% CI 2.92 to 6.82) rather than during the driving episode itself (RR 1.05, 95% CI 0.48 to 2.30).

was not elevated during driving and the absolute risk was low. These data provide reassurance that driving by ICD patients should not translate into an important rate of personal or public injury. (J Am Coll Cardiol 2007; 50:2233–40) © 2007 by the American College of Cardiology Foundation

Europace (2009) **11**, 1097–1107
doi:10.1093/europace/eup112

CONSENSUS STATEMENT

Consensus statement of the European Heart Rhythm Association: updated recommendations for driving by patients with implantable cardioverter defibrillators

"It should be emphasized that the risk is mainly a consequence of the underlying condition and not of the presence of the ICD"

Assessment of the cardiac patient for fitness to drive.
Can J Cardiol 1992;8: 406–19

Risk of Harm (RH) formula

$$RH = TD \times V \times SCI \times Ac$$

- proportion of time spent behind the wheel or distance driven in a given time period (TD),
- type of vehicle driven (V),
- yearly risk of sudden cardiac incapacitation (SCI),
- the probability that such an event will result in a fatal or injury producing accident (Ac)

1%/year for professional driver

	Restriction for private driving	Restriction for professional driving
ICD implantation for secondary prevention	Three months	Permanent
ICD implantation for primary prevention	Four weeks	Permanent
After appropriate ICD therapy	Three months	Permanent
After inappropriate ICD therapy	Until measures to prevent inappropriate therapy are taken	Permanent
After replacement of the ICD	One week	Permanent
After replacement of the lead system	Four weeks	Permanent
Patients refusing ICD for primary prevention	No restriction	Permanent
Patients refusing ICD implantation for secondary prevention	Seven months	Permanent

AZIENDA U.S.L. CITTA' DI BOLOGNA
Ospedale Maggiore C. A. Pizzardi
UNITA' OPERATIVA DI CARDIOLOGIA
Direttore: Dott. Giuseppe Di Pasquale
TEL 051 64.78.506

N° archivio: 6710

Cognome: **Nome:**
Data di nascita: **Sesso:**
Indirizzo: **Città:**
Telefono:

CONTROLLO DEL DEFIBRILLATORE

Data:

Medico referente: dott. carinci

	Data imp.	Marca	Modello	Tipo
Defibrillatore	16/07/2009	MEDTRONIC	MAXIMO DR 7278	

Data ultimo controllo:

Interventi dell'ICD dall'ultimo controllo:
Appropriati: 2, primo:23/08/2014, ultimo:19/07/2014, FC min:180 19/07/2014, FCMax:188 23/08/2014 Modalità d'interruzione: 2 ATP

PRINCIPALI PARAMETRI PROGRAMMATI

Antibrady

Modalità di stimolazione: DDDR **FC:** 50

Ritmo spontaneo No: INDOTTO

Terapia anticoagulante: Sì

CONCLUSIONI: Controllo a 3 mesi.

PROSSIMO CONTROLLO IN DATA: ALLE ORE:
MUNITO DI IMPEGNATIVA MEDICA PER ECG + CONTROLLO ICD

Medico: Dr

Infermiere:

Conclusioni

- Paziente instabile, con sintomi quotidiani e a riposo
- Perdite di coscienza ripetitive, con caratteristiche maligne
- Defibrillatore

Baseline factors predicting early resumption of driving after life-threatening arrythmias in the AVID trial
[K. Hickey et al., Am Heart J, 2001]

802 Paz (58% hanno ripreso a guidare entro 6 mesi dall'impianto; 80% entro 1 anno)

Indici prognostici: maschio, età <65, razza bianca, cultura universitaria, TV(appare meno grave di FV)

Comorbilità come storia di scompenso cardiaco e ridotta frazione d'eiezione non sono indici significativi di comportamento di guida

Shock:3253, ma solo 6(<1%) durante guida

Profilo sociodemografico indica "necessità di" piuttosto che "mancanza di ascolto"

Raccomandazioni di guida
(Study group ”ICD and driving”, European Society of Cardiology)

- Follow up per un determinato periodo post-impianto per documentare un’adeguata soppressione dell’aritmia
- Il giudizio del cardiologo è fondamentale e varia a seconda del Pz

2 categorie: a) guida personale; b) guida commerciale

a) **<36.000 km/anno** oppure **<720 ore/anno**

veicolo<11.000 kg

la guida non determina reddito

b) se le condizioni in a) non sono soddisfatte

Raccomandazioni di guida

(Study group ”ICD and driving”, European Society of Cardiology)

Categoria	Raccomandazioni di guida	Caratteristiche del Paziente
Classe I	**Nessuna restrizione**	**Impianto profilattico (storia familiare di morte improvvisa, TV non sostenuta con depressa funzione ventricolare sx)**
ClasseII	**Restrizione per un certo periodo**	**Per tutti gli altri Pz, guida non commerciale**
A	**Restrizione per 6 mesi post-impianto**	**Pz a basso rischio senza ricorrenze TV**
B	**Restrizione estesa dopo shock per 6 mesi ed accurata valutazione medica**	**Pz a rischio intermedio con ricorrenze TV ben tollerate emodinamicamente**
Classe III	**Restrizione totale**	**Pz ad alto rischio con ricorrenze TV instabili Guida commerciale**

Conclusioni

La letteratura al giorno d’oggi non ha ancora mostrato un accresciuto rischio di incidenti stradali riconducibili a shock (con o senza sincope) durante i primi mesi dopo l’impianto di ICD o per periodi più lunghi di Follow up

Incidenti mortali dovuti a scariche durante la guida sono molto rari

Guidare con un ICD impiantato non rappresenta un argomento fondamentale in materia di pubblica sicurezza

A tutt’oggi manca una chiara regolamentazione in materia di restrizione alla guida con ICD

Personal and Public Safety Issues Related to Arrhythmias That May Affect Consciousness: Implications for Regulation and Physician Recommendations
A Medical/Scientific Statement From the American Heart Association and the North American Society of Pacing and Electrophysiology

Circulation 1996

This report focused mainly on patients with secondary prevention and recommended a driving restriction of 6 months after ICD implantation for this patient population.

PATENTE DI GUIDA PER I PAZIENTI PORTATORI DI PACEMAKER

Molti studi sottolineano tre condizioni di rischio nei pazienti affetti da Bradi e/o Tachiaritmie:

- RISCHIO MOLTO BASSO: PAZIENTI SENZA RESTRIZIONI DI GUIDA
- RISCHIO MODERATO: PAZIENTI CON LIMITATE RESTRIZIONI DI GUIDA
- RISCHIO MOLTO ALTO: PAZIENTI CON RESTRIZIONI NELLA GUIDA

PATENTE DI GUIDA NEI PAZIENTI PORTATORI DI PACEMAKER

- **Rischio molto basso:** PSVT non sincopale, AF cronica, VT senza malattia organica, **pacemaker artificiale**
- **Rischio moderato:** PSVT e precedente sincope, AF parossistica non valvolare e basso rischio embolico, SSS, AV congenito, **sincope neuromediata ricorrente**, pazienti WPW con AF e RR breve, **sindrome B/T con PM VVI e alto rischio embolico**
- **Rischio molto alto:** VT in malattie strutturali del cuore, pazienti che hanno subito un impianto con AICD

PATENTE DI GUIDA PER I PAZIENTI PORTATORI DI PACEMAKER

- I pazienti che hanno un PM impiantato appartengono al primo gruppo di rischio dopo il periodo post-impianto, cioè dopo la rimozione dei punti e l'assestamento delle soglie di stimolazione
- La prognosi è una conseguenza della cardiopatia e di altre malattie associate come aritmie,bassa frazione d'eiezione