

SINDROME METABOLICA E SUE COMPLICANZE NELL'ANZIANO

Fisiopatologia, diagnosi e terapia

enzo manzato



TABLE 1. National Cholesterol Education Program (NCEP) Adult Treatment Panel III: The Metabolic Syndrome*¹²

Risk Factor	Defining Level
Abdominal obesity (waist circumference)	
Men	>102 cm (>40 in)
Women	>88 cm (>35 in)
Triglycerides	>150 mg/dL
HDL-C	
Men	<40 mg/dL
Women	<50 mg/dL
Blood pressure	>130/80 mm Hg
Fasting glucose	>110 mg/dL

*Diagnosis is established when >3 of these risk factors are present.

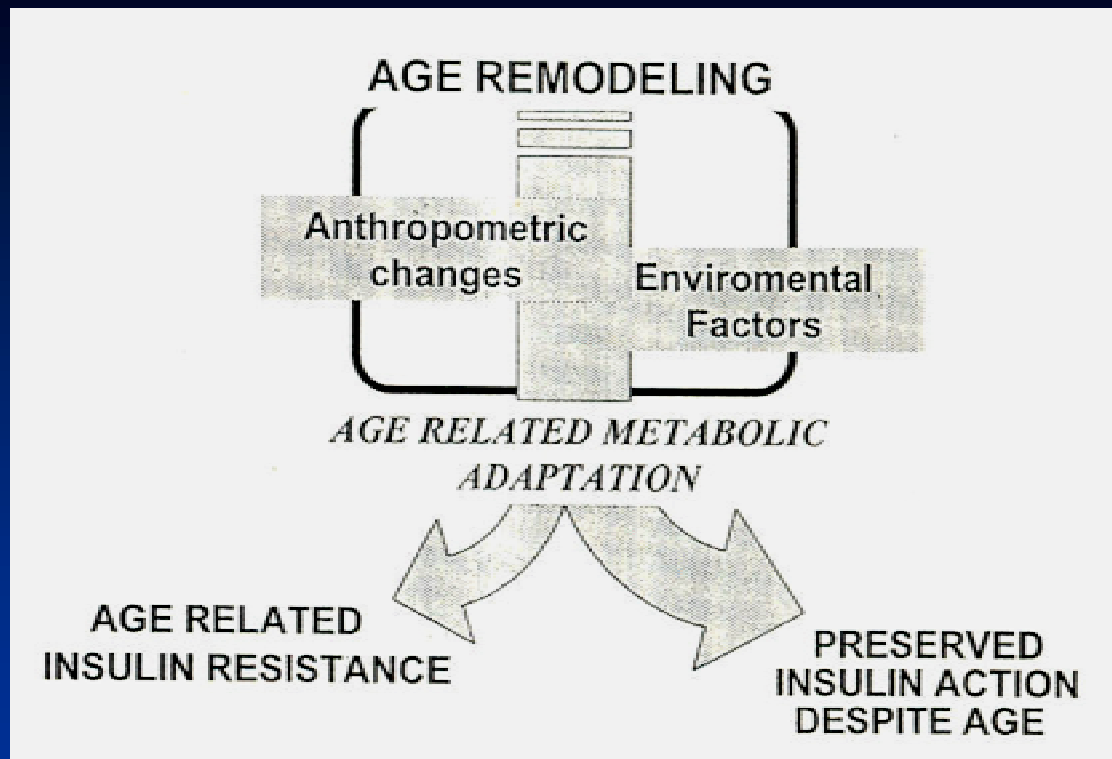
TABLE 2. World Health Organization (WHO) 1999 Definition of Metabolic (Insulin Resistance) Syndrome¹¹: Impaired Glucose Tolerance,* Diabetes Mellitus,† or Insulin Resistance,‡ Together With at Least 2 of the Components Listed in the Table

Components	Criteria
Hypertension	Raised arterial pressure (>140/90 mm Hg) or antihypertensive medication
Dyslipidemia	Raised plasma triglycerides (>1.7 mmol/L) or low HDL cholesterol (<0.9 mmol/L in men and <1.0 mmol/L in women)
Central or general obesity	Waist to hip ratio >0.90 in men; >0.85 in women or body mass index >30 kg/m ²
Microalbuminuria	Urinary albumin excretion rate >20 μg/min or albumin:creatinine ratio >30 mg/g

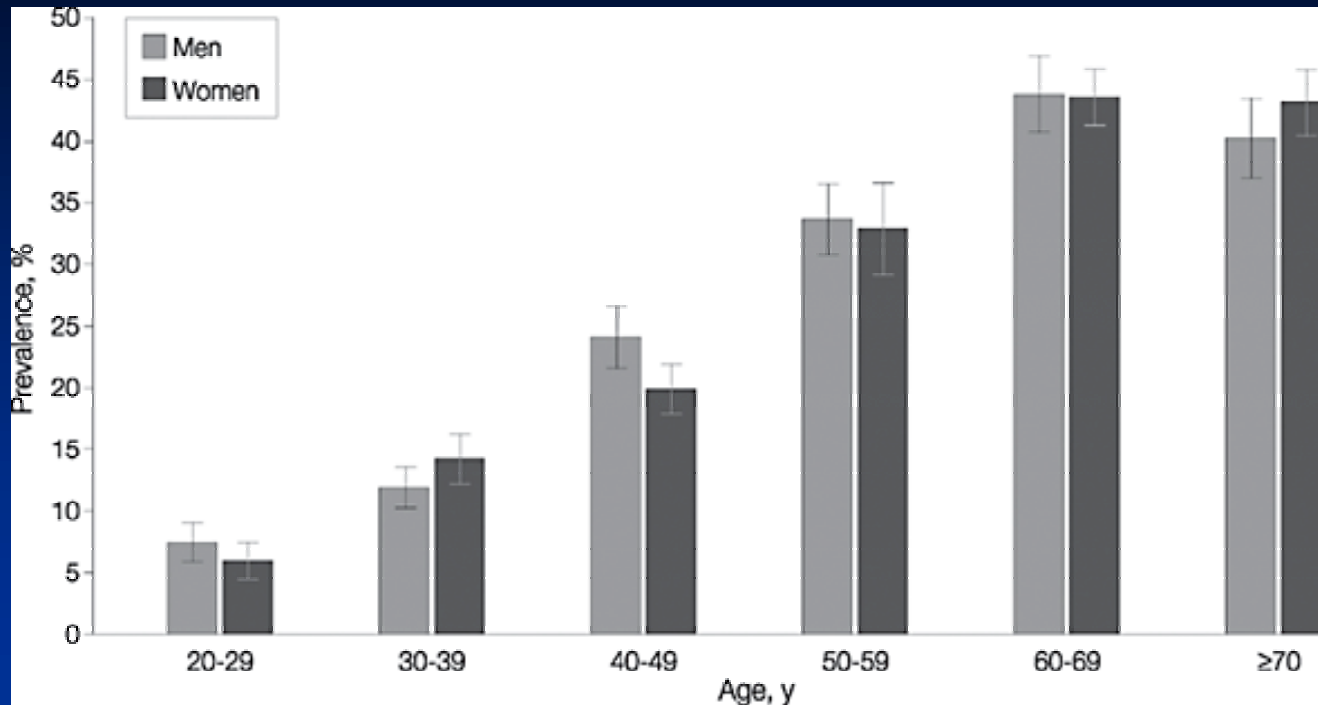
*Two hours post–glucose load plasma venous glucose >7.8 mmol/L.

†Fasting plasma venous glucose >6.1 mmol/L or 2-hour post–glucose load plasma venous glucose >11.1 mmol/L.

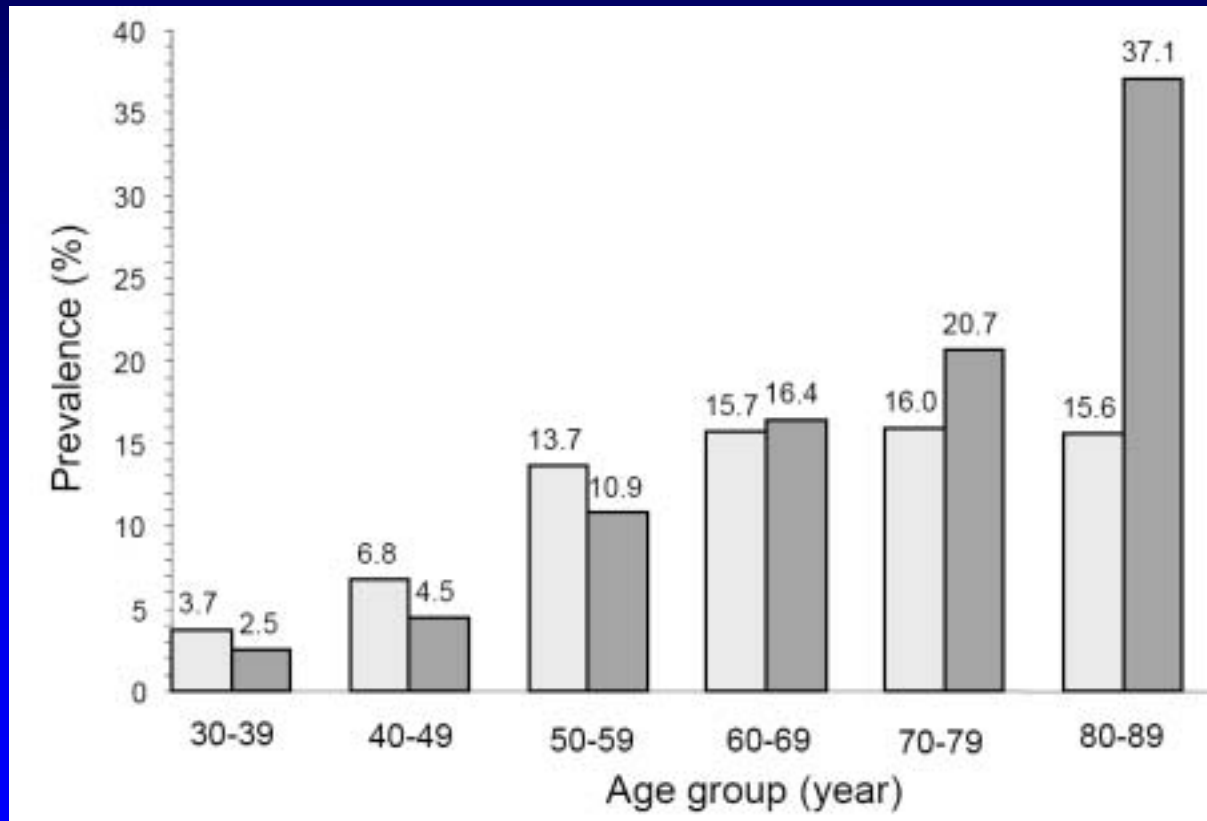
‡Highest quartile fasting insulin or Homeostasis Model Assessment score for population under investigation.



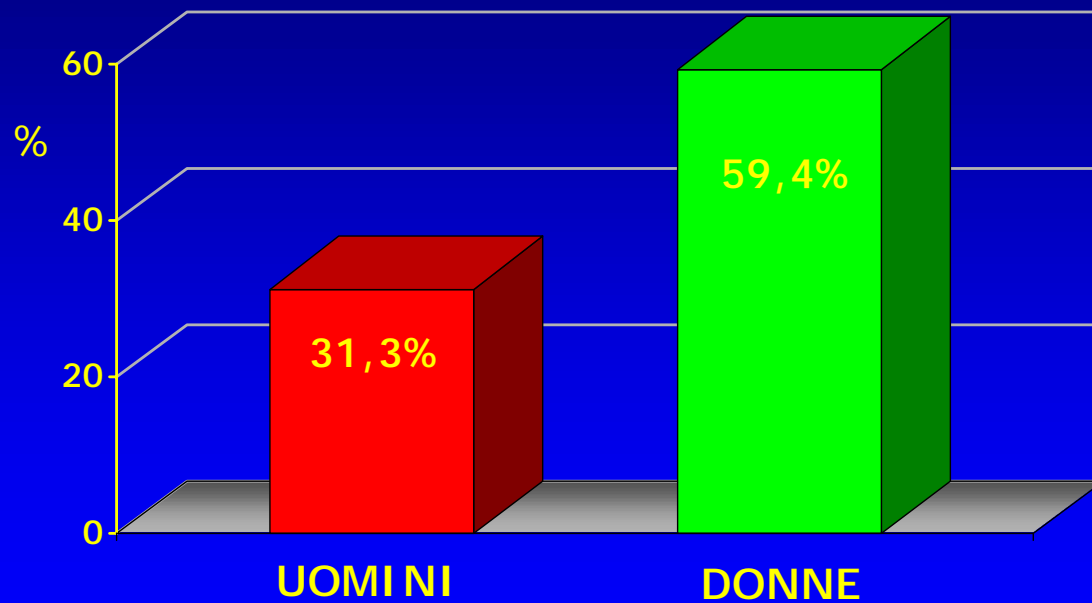
Prevalenza di sindrome metabolica in USA - Studio NHANES



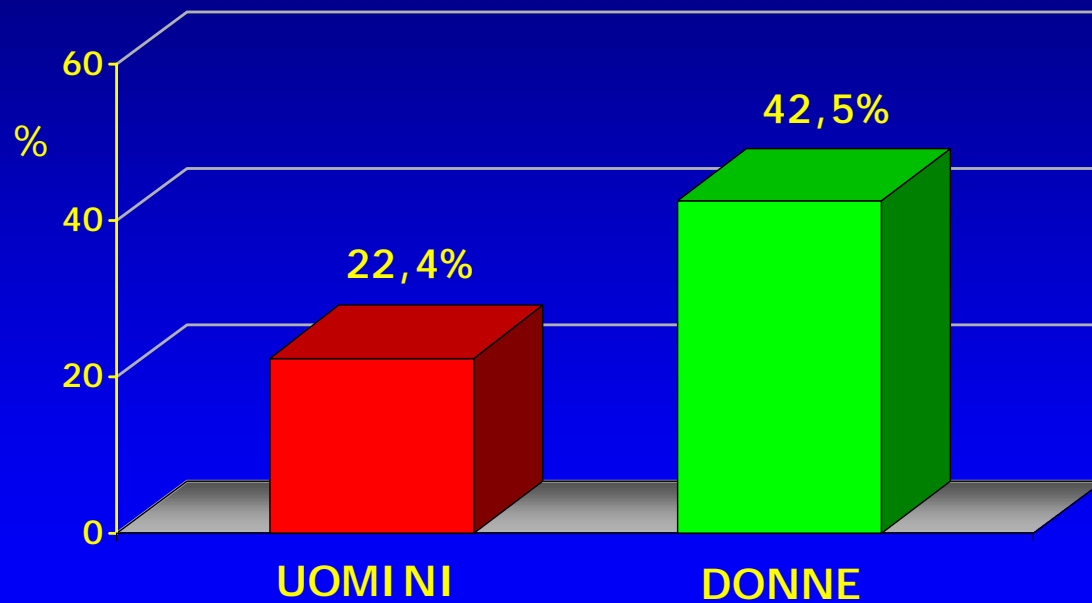
Prevalenza di sindrome metabolica in Europa - Studio DECODE



Prevalenza di sindrome metabolica in Italia - Studio I.L.S.A.



Prevalenza di sindrome metabolica in Veneto – Studio Pro.V.A.



PRO.V.A

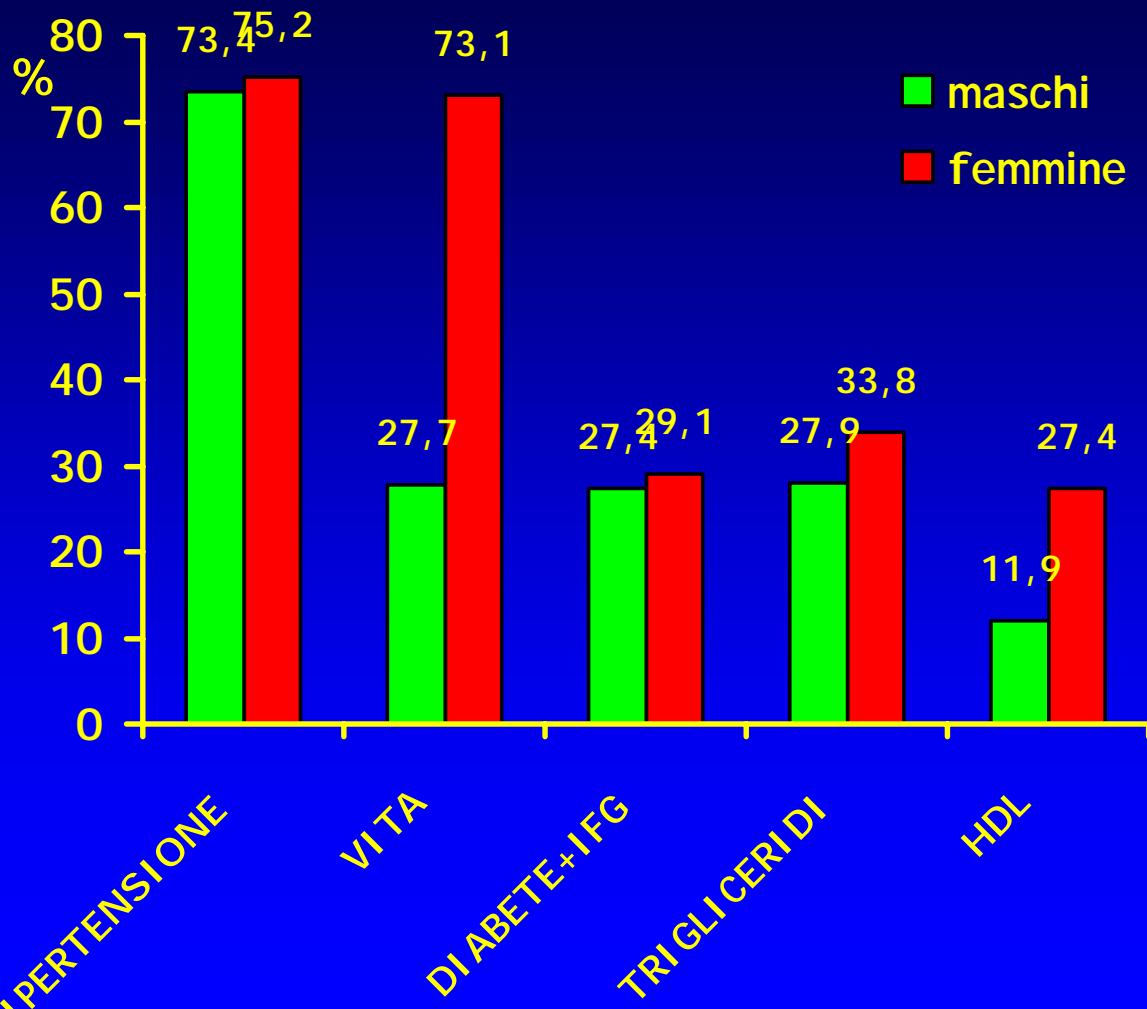
	Maschi (n=1245)	Femmine (n=1854)	p
Età (anni)	77±8	77±8	n.s.
Peso (kg)	73±12	66±13	0,000
Altezza (cm)	166±7	153±6	0,000
IMC (kg/m²)	26,8±3,8	28,1±5,0	0,000
Vita (cm)	97±10	96±12	0,003

PRO.V.A

Sindrome Metabolica per classi di età

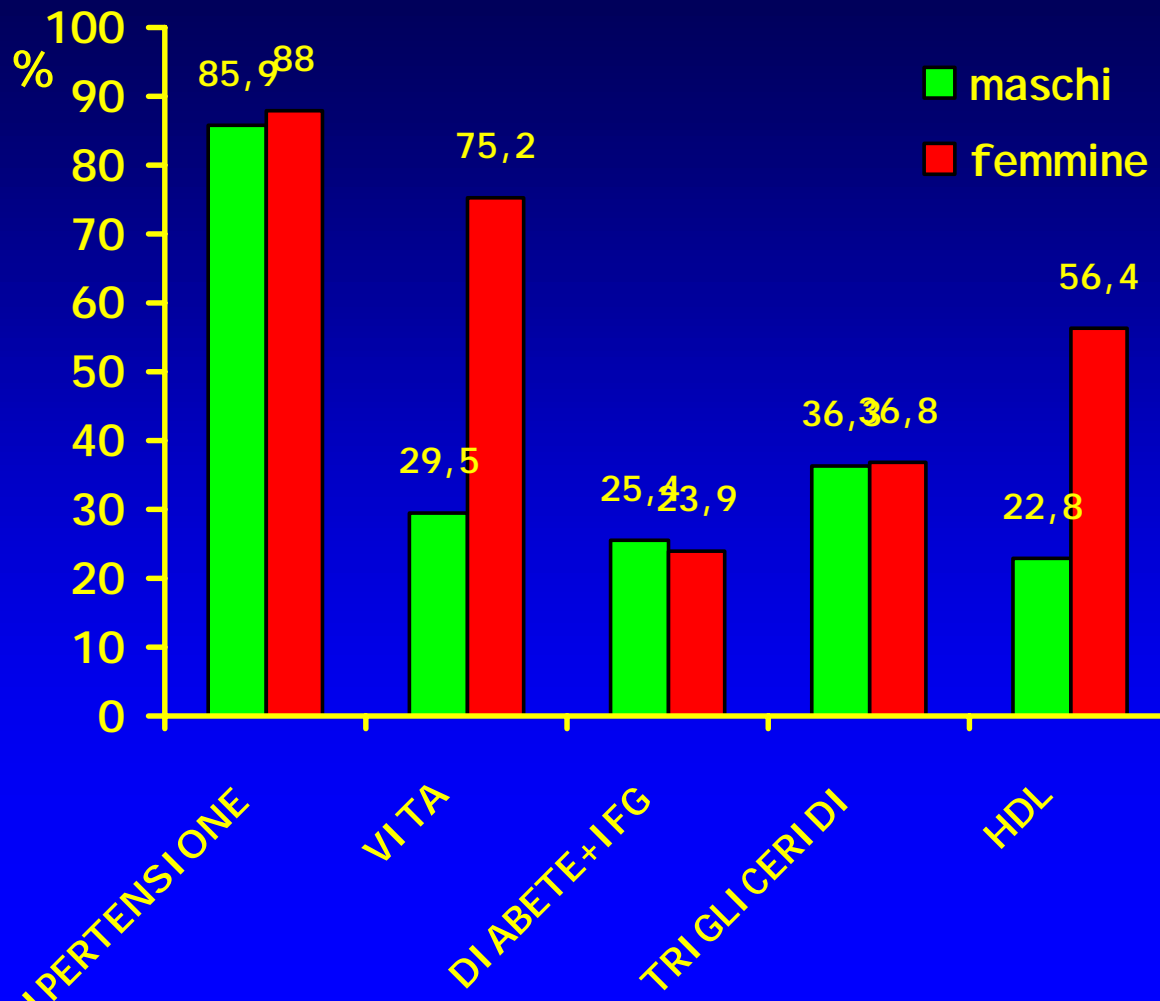
	65-74	75-84	≥85 aa	χ^2
Uomini % (n)	25,4 (137)	18,8 (73)	21,5 (53)	0,055
Donne % (n)	40,8 (342)	44,1 (274)	44,2 (121)	0,387

Prevalenza singole alterazioni della SM nello studio Pro.V.A.

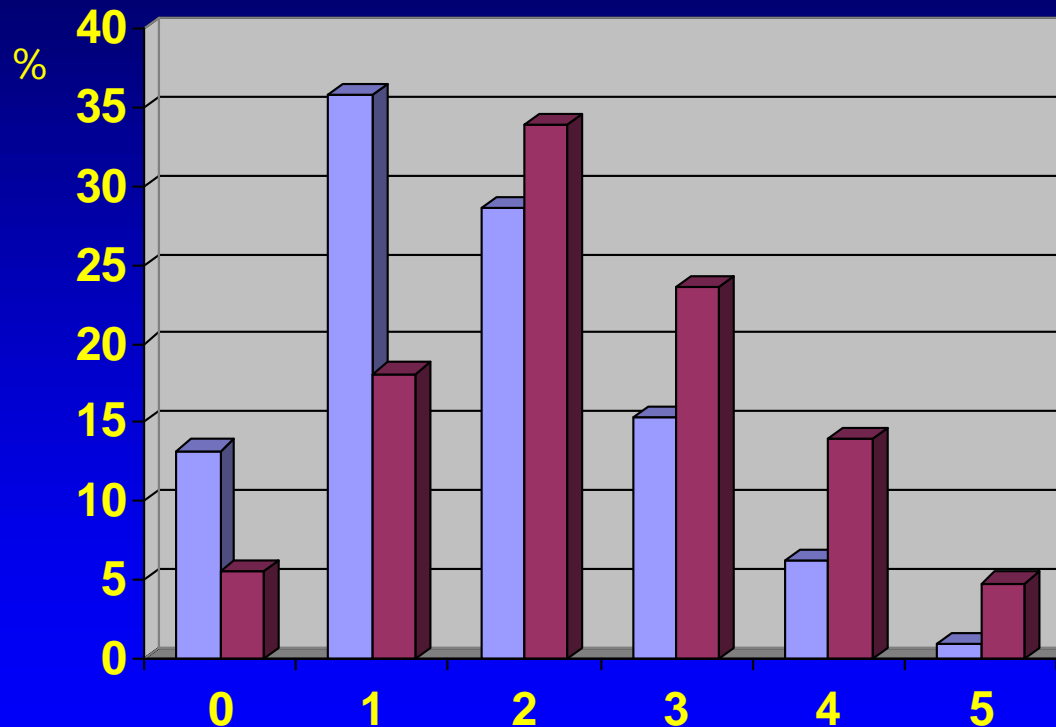


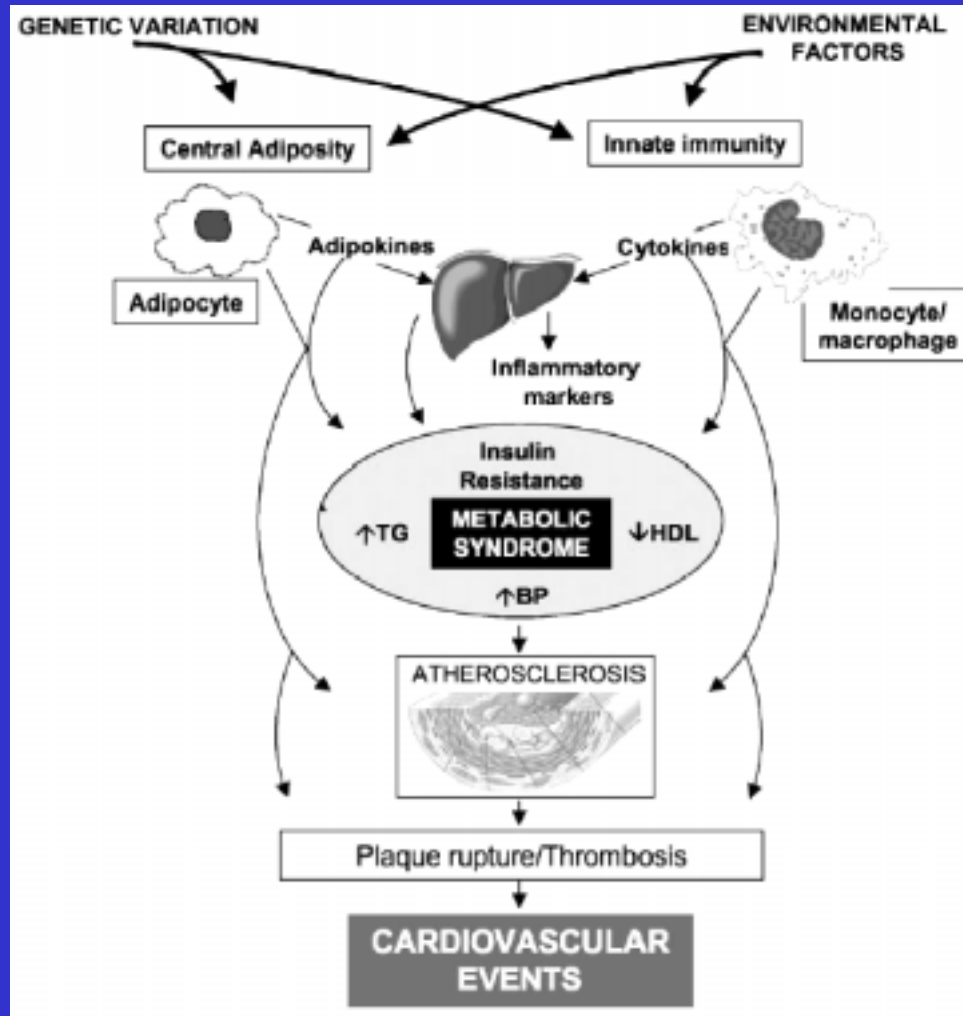
PRO.V.A

Prevalenza singole alterazioni della SM nello studio ILSA

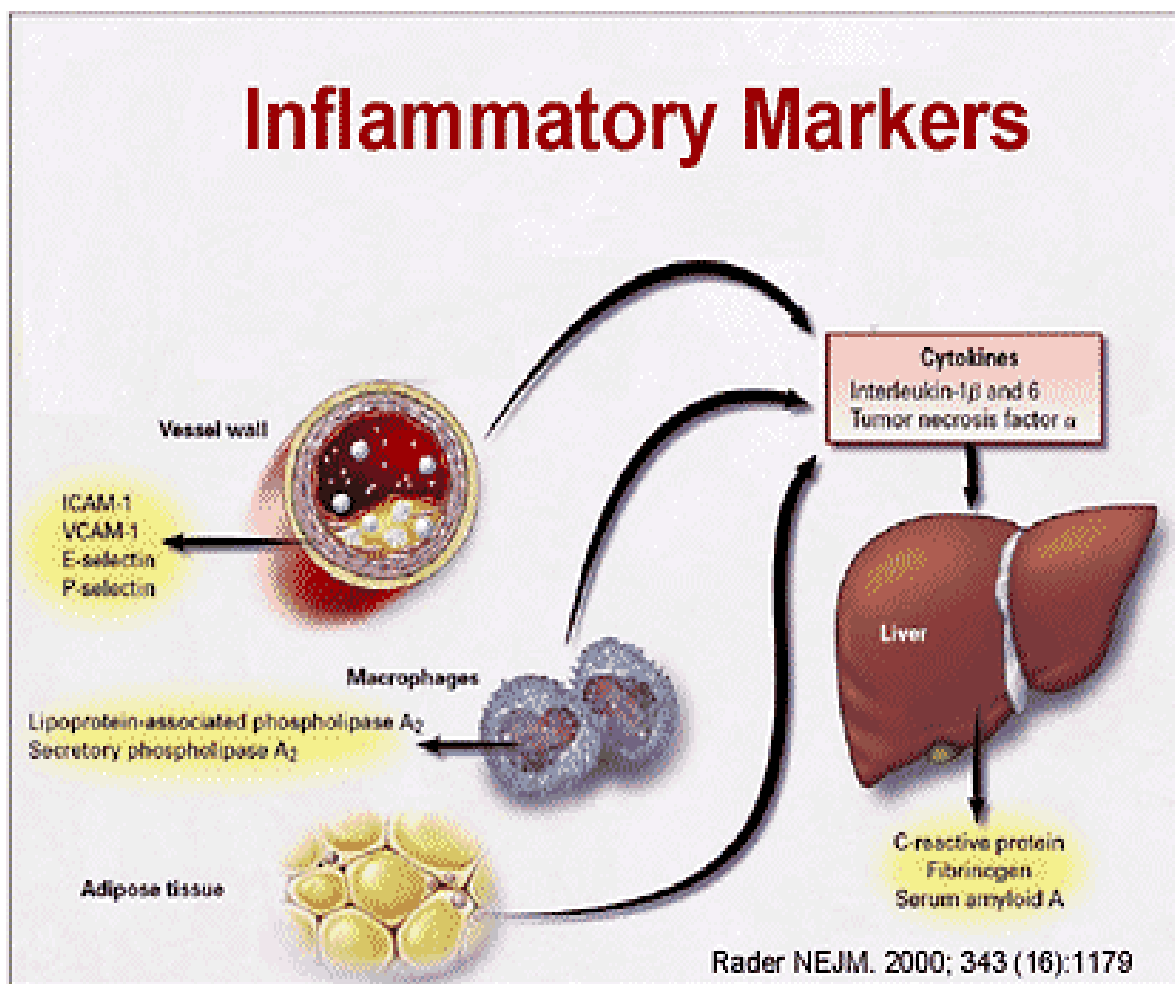


Numero di componenti della Sindrome Metabolica nel Pro.V.A.





Inflammatory Markers



PRO.V.A**Sdr.Metab. Sdr.Metab.**

	NO	SI	p
	Uomini	Uomini	
Età (anni)	76±8	76±8	n.s.
Peso (kg)	71±11	83±12	0,000
Altezza (cm)	165±7	167±7	<0,05
IMC (kg/m2)	25,9±3,5	29,7±3,6	0,000
Vita (cm)	95±9	106±9	0,000
Press. sist.	153±22	156±20	<0,05
(mmHg)			
diast.	83±12	85±11	<0,05
Fumo (sig/die)	12±13	15±16	0,004
Fibrinogeno	334±79	343±86	n.s.
VES	15±15	18±20	<0,05

PRO.V.A**Sdr.Metab. Sdr.Metab.**

	NO	SI	p
	Donne	Donne	
Età (anni)	75±8	76±7	n.s.
Peso (kg)	62±12	70±12	0,000
Altezza (cm)	153±7	153±6	n.s.
IMC (kg/m2)	26,7±4,6	30,0±4,8	0,000
Vita (cm)	92±12	101±10	0,000
Press. sist.	152±22	155±22	0,000
(mmHg)			
diast.	83±11	83±11	n.s.
Fumo (sig/die)	1±4	1±5	n.s
Fibrinogeno	349±75	362±91	<0,05
VES	22±17	27±20	0,000

PRO.V.A**Metabolica****Metabolica****NO****SI****p****Uomini****Uomini****Colesterolo
(mg/dl)**

218±42

226±45

<0,05

Trigliceridi

114±61

183±76

0,000

Ct-LDL

137±36

143±37

<0,05

Ct-HDL

58±15

47±13

0,000

Uricemia

5,6±1,4

6,2±1,5

0,000

Glicemia

100±25

129±46

0,000

HbA1c (%)

5,1±0,8

5,8±1,4

0,000

Leucociti

6,1±1,8

6,6±1,7

0,000

PRO.V.A**Metabolica****Metabolica****NO****SI****p****Donne****Donne****Colesterolo
(mg/dl)**

238±41

241±46

n.s.

Trigliceridi

108±39

188±103

0,000

Ct-LDL

152±37

152±39

n.s.

Ct-HDL

65±15

53±14

0,000

Uricemia

4,7±1,3

5,5±1,6

0,000

Glicemia

96±20

123±44

0,000

HbA1c (%)

5,1±0,7

5,9±1,3

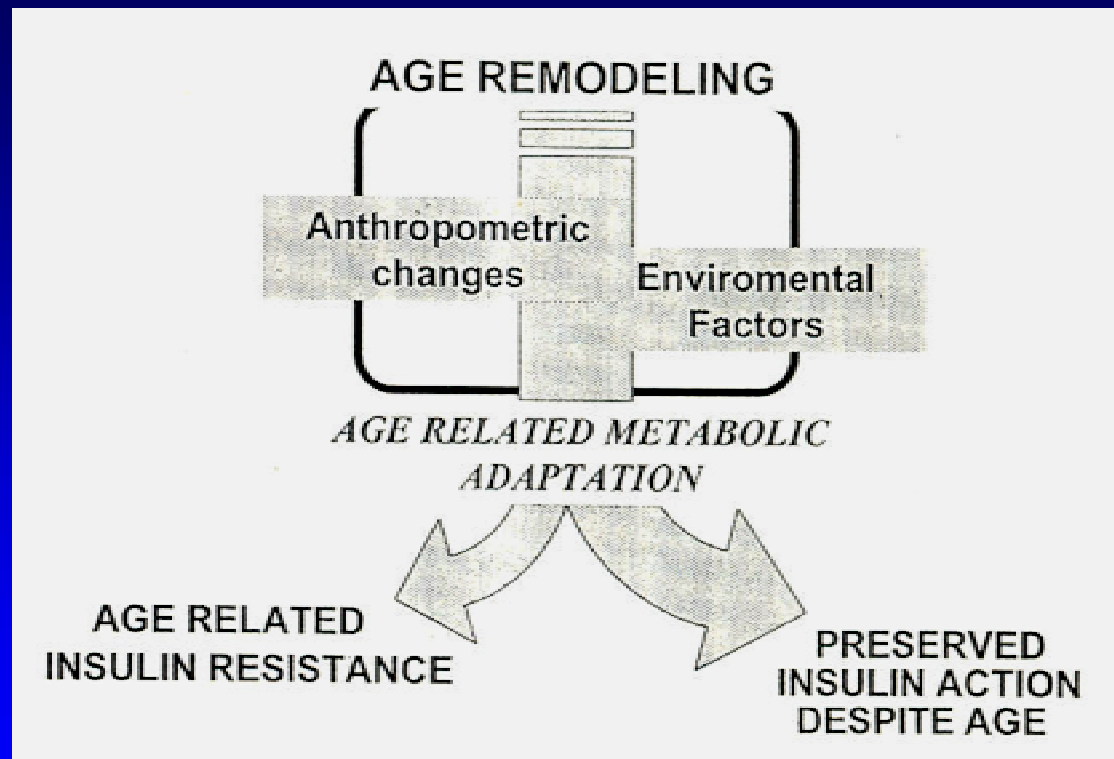
0,000

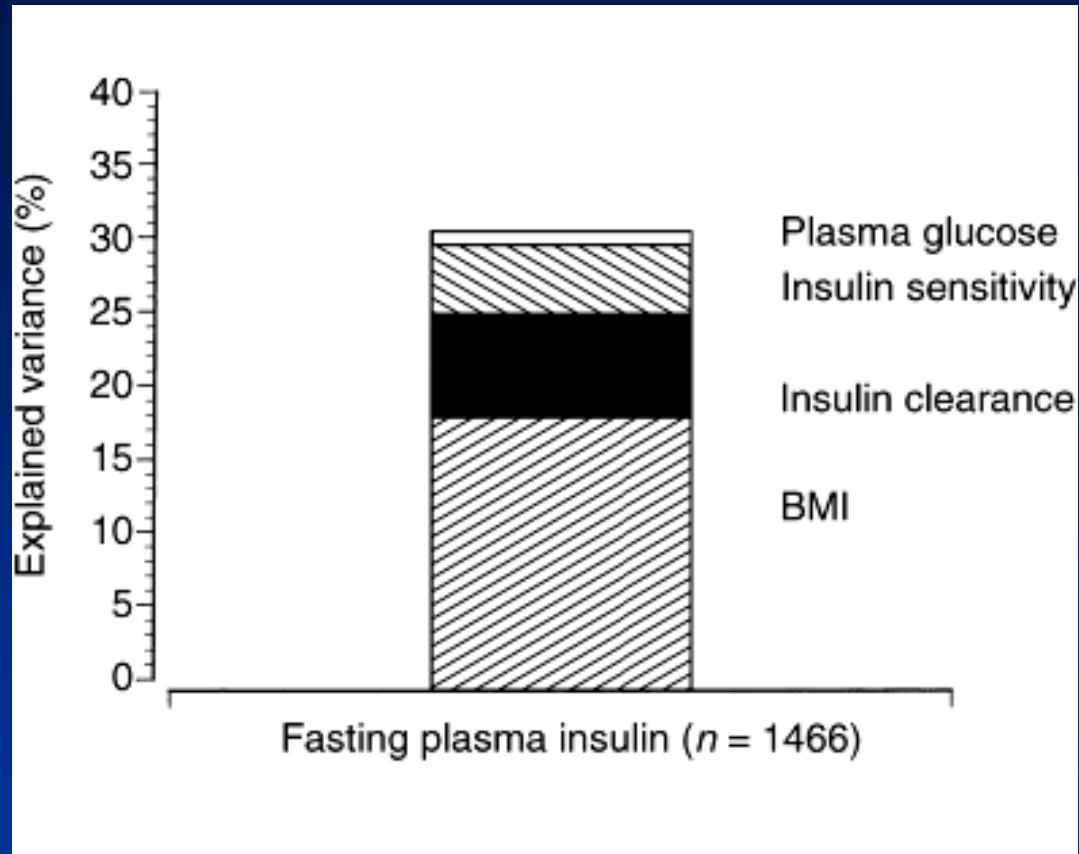
Leucociti

5,7±3,0

6,4±2,0

0,000





The fatty acid composition of plasma phospholipids and the insulin sensitivity in elderly diabetic patients. The Pro.V.A. study

Fatty Acids	Age	BMI	Walst circumference
- saturated	-0.11	+0.109	+0.227°
- monounsaturated	+0.25°	-0.095	-0.148*
- polyunsaturated	-0.24°	+0.062	+0.071
- n-6 polyunsaturated	-0.21°	+0.031	+0.037
- n-3 polyunsaturated	+0.13	+0.088	+0.094

* $p < 0.05$, ° $p < 0.01$.

The fatty acid composition of plasma phospholipids and the insulin sensitivity in elderly diabetic patients. The Pro.V.A. study

Fatty Acids	Glycemia	HbA_{1c}	Insulin	HOMA
- saturated	+0.178 [°]	+0.120	+0.136*	+0.196 [°]
- monounsaturated	-0.133*	-0.009	+0.013	-0.067
- polyunsaturated	+0.074	-0.044	-0.077	-0.008
- n-6 polyunsaturated	+0.072	-0.056	-0.102	-0.031
- n-3 polyunsaturated	+0.002	+0.041	+0.081	+0.072

* $p < 0.05$, [°] $p < 0.01$.

The fatty acid composition of plasma phospholipids and the insulin sensitivity in elderly diabetic patients. The Pro.V.A. study

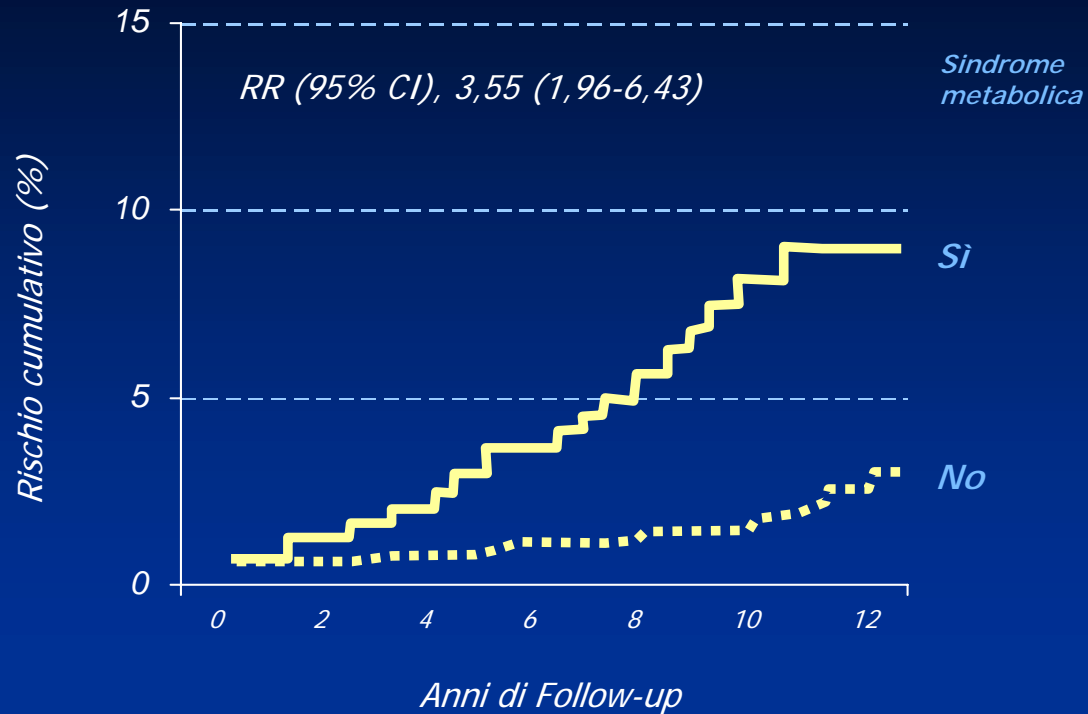
Table 5 - Stepwise multiple regression analysis.

	nl HOMA Beta coefficient	p-value
Age	-0.123	0.045
BMI	0.265	0.014
Waist circumference	0.097	NS
nl triglycerides	0.310	<0.0001
HDL cholesterol	0.035	NS
Saturated fatty acids	0.062	NS

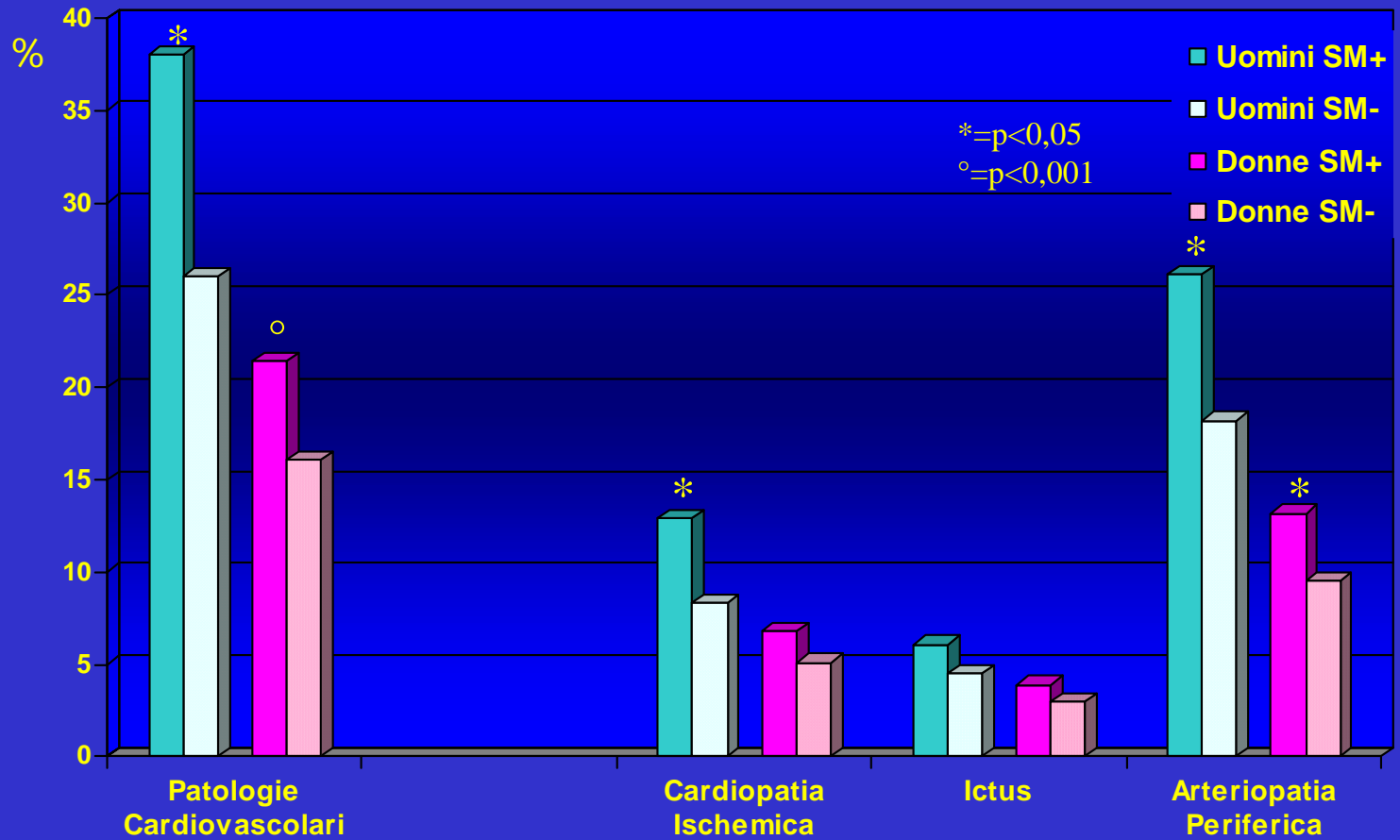
nl: natural log.

Sindrome metabolica e mortalità cardiovascolare

11 anni follow-up; 1209 uomini

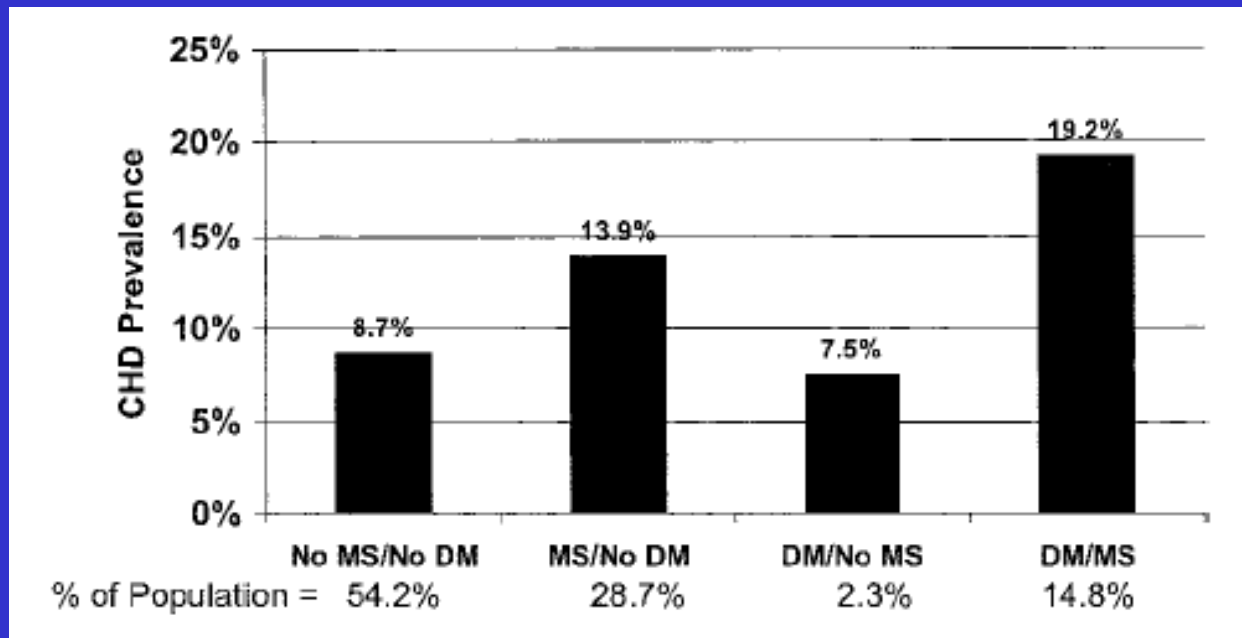


Malattie Cardiovascolari nella Sindrome Metabolica

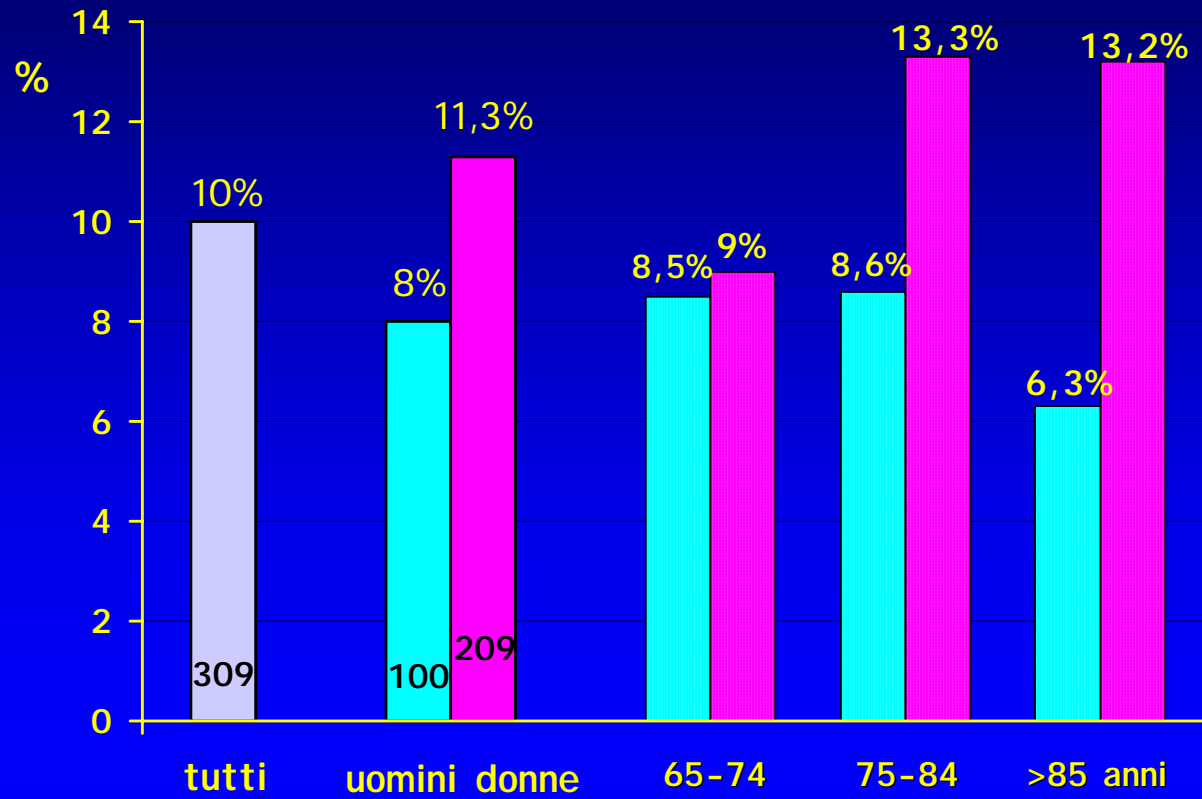


NCEP-Defined Metabolic Syndrome, Diabetes, and Prevalence of Coronary Heart Disease Among NHANES III Participants Age 50 Years and Older

Charles M. Alexander,¹ Pamela B. Landsman,¹ Steven M. Teutsch,¹ and Steven M. Haffner²



Prevalenza di diabete Studio Pro.V.A.



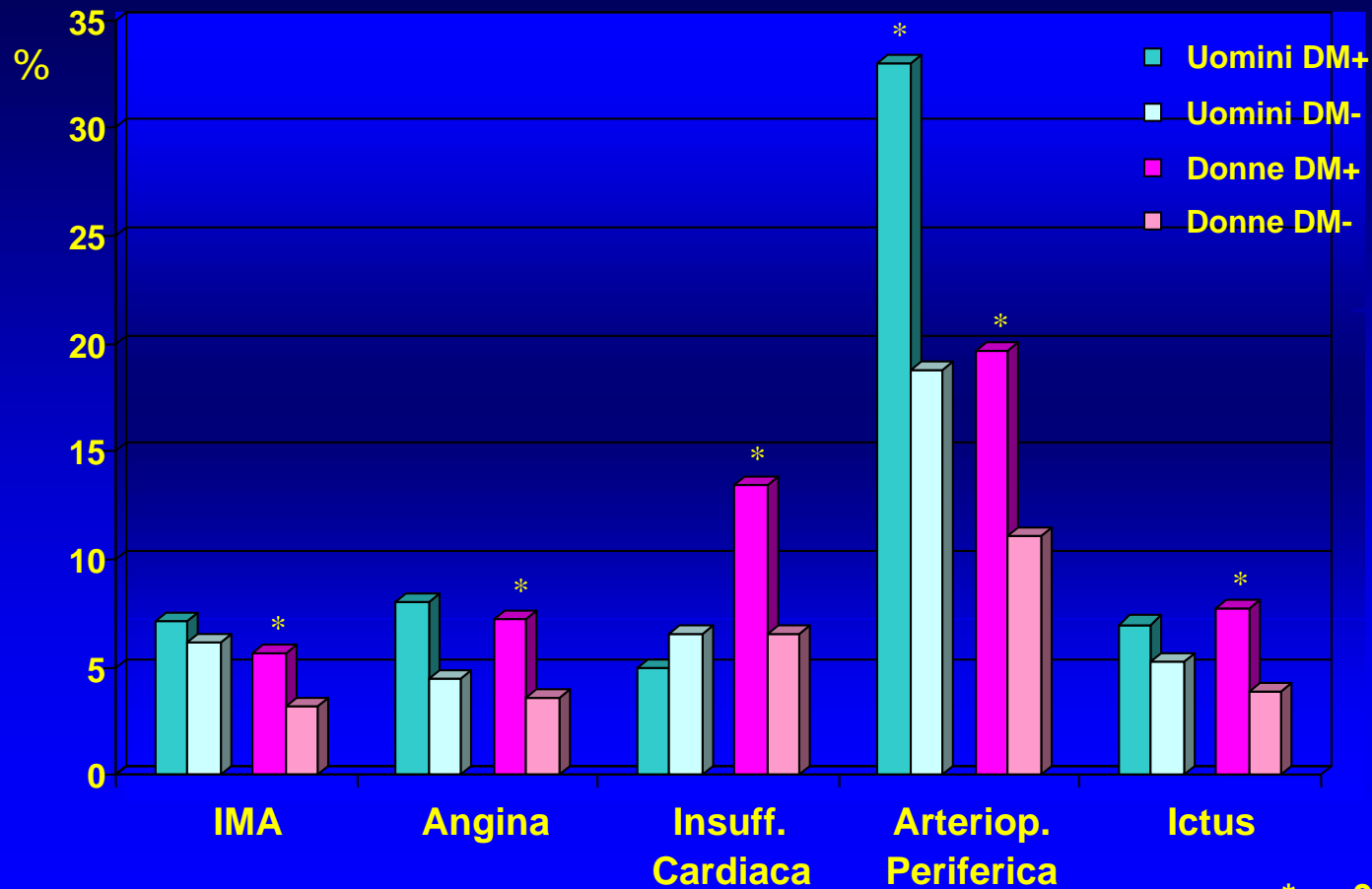
PRO.V.A.

Diabete "sommerso"

- 207 nuovi casi* su 2751 soggetti non diabetici
 - 7,5 % UOMINI
 - 7,6 % DONNE

*glicemia a digiuno \geq 126 mg/dl

Malattie Cardiovascolari nel Diabete



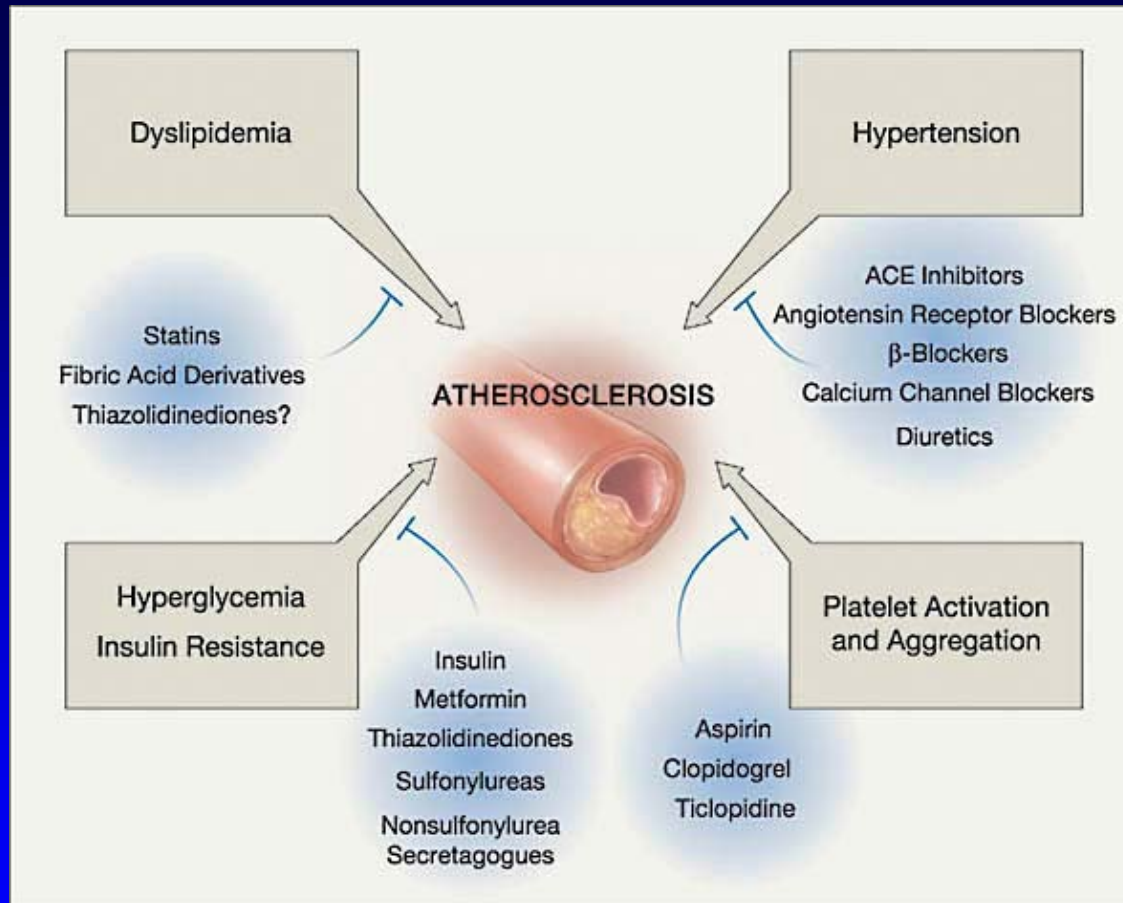
* p<0,05

	Diabete	
	Sì	No
n (uomini/donne)	301(100/209)	2732(1080/1710)
Scolarità (anni)	4.51 ± 2.74	4.78 ± 2.88
MMSE	21.67 ± 7.32	22.94 ± 6.60*
ADL	18.26 ± 3.46	19.48 ± 3.16*
IADL	14.34 ± 3.66	15.00 ± 3.49*
Alcol (ml/dì)	16.96 ± 26.99	24.54 ± 31.98*
Depressione	10.26 ± 6.49	8.66 ± 6.29**

* p< 0.005, **p< 0.001 vs diabetici

	Diabete	
	Sì	No
MMSE ≤ 21	110 (36.5%)	819 (30.0%)
MMSE 22-25	84 (27.9%)	667 (24.4%)
MMSE ≥ 26	107 (35.6%)	1246 (45.6%)

$\chi^2 p < 0.01$



Guidelines for Improving the Care of the Older Person with Diabetes Mellitus

Table 1. Evidence Evaluated for Each Component of Diabetes Care

Component of Care	RCTs	Systematic Reviews or Meta-Analyses
Diabetes recommendations		
Aspirin use	7	3
Smoking cessation	2	0
Hypertension management	16	2
Glycemic control	9	2
Lipid management	13	6
Eye care	4	0
Foot care	1	0
Diabetes education	37	0