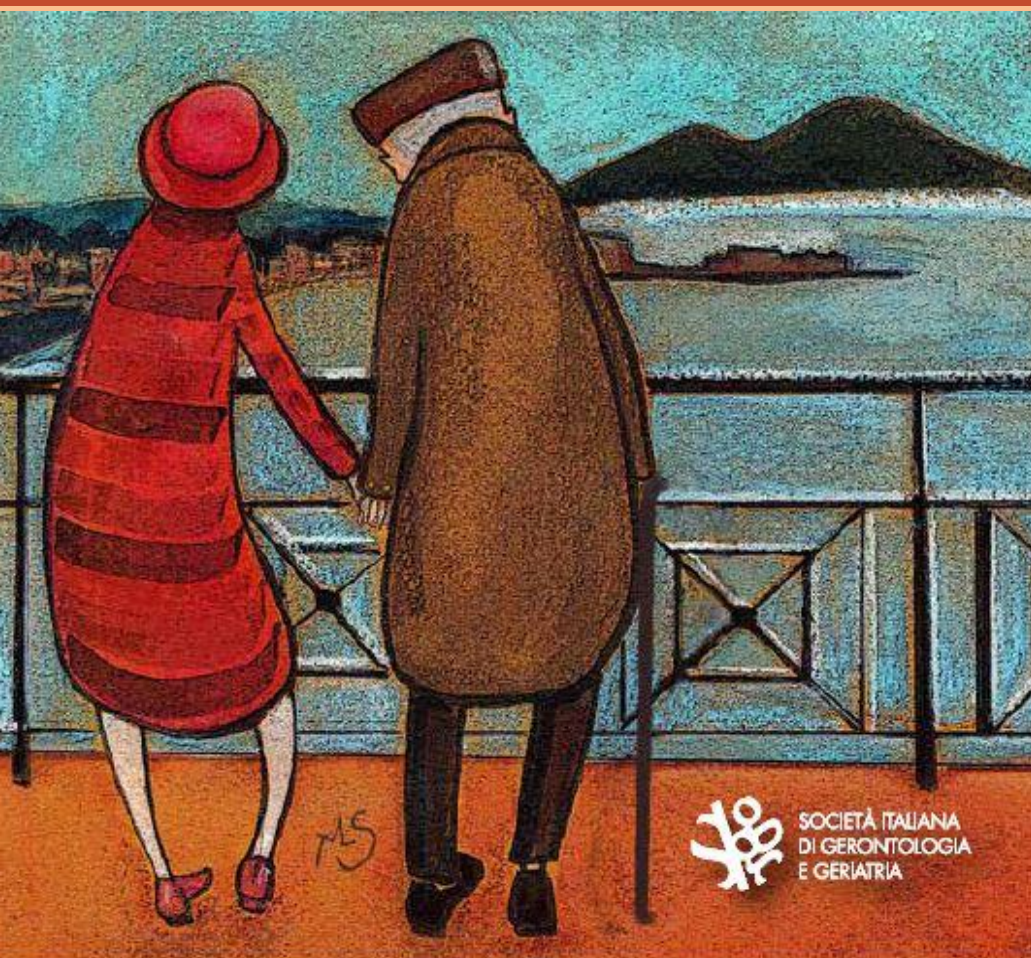


62^o CONGRESSO NAZIONALE SIGGG

INVECCHIAMENTO: SCENARIO 2.0

NAPOLI 2017
29 novembre - 2 dicembre



Focus sul paziente anziano complesso con diabete: definizione ed epidemiologia

Gianluigi Vendemiale

Dipartimento Internistico

Azienda Ospedaliero-Universitaria

OO.RR. Foggia



550'000 diabetici con una prevalenza del 6.2% M e 5.2% F

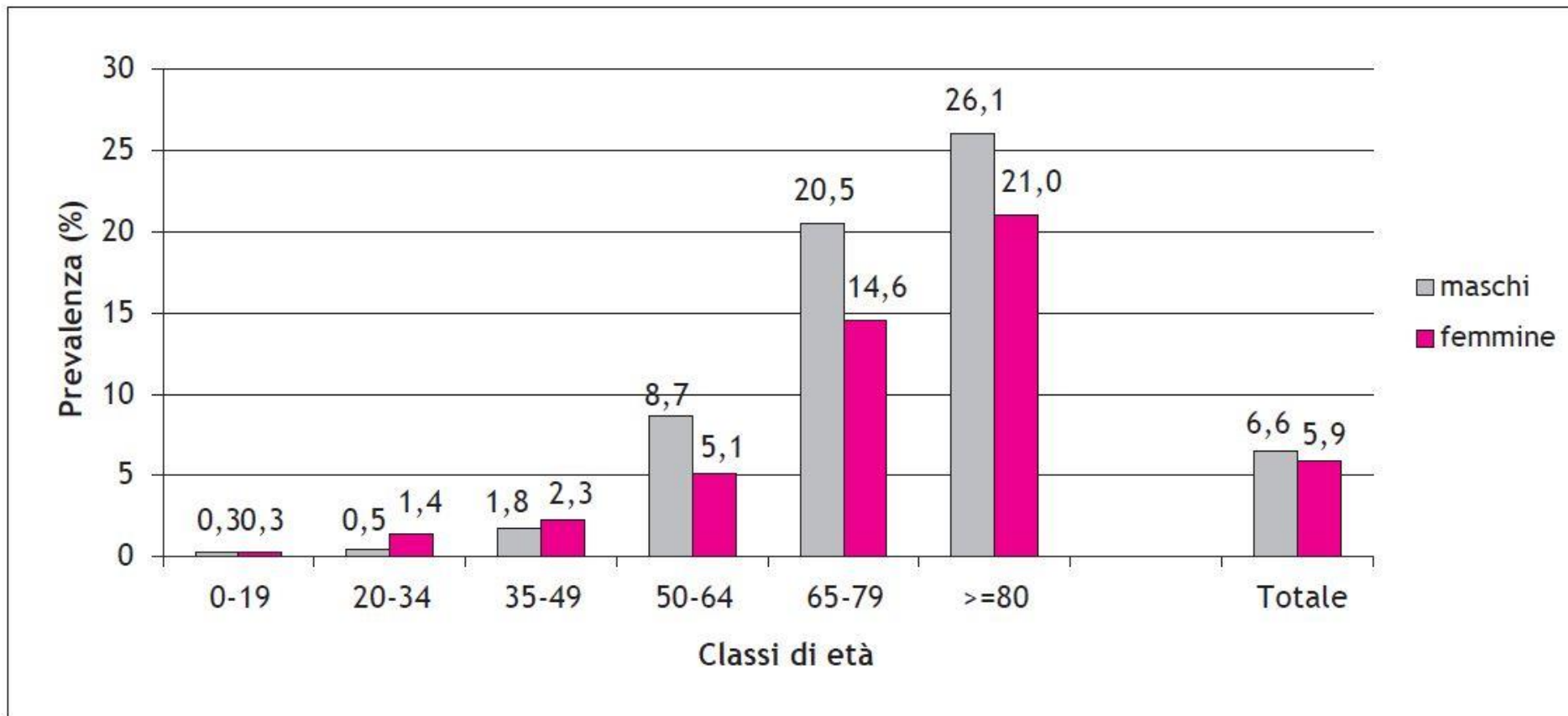
Oltre il 65% dei diabetici ha più di 65 anni

Il 25% ha un'età \geq 80 anni

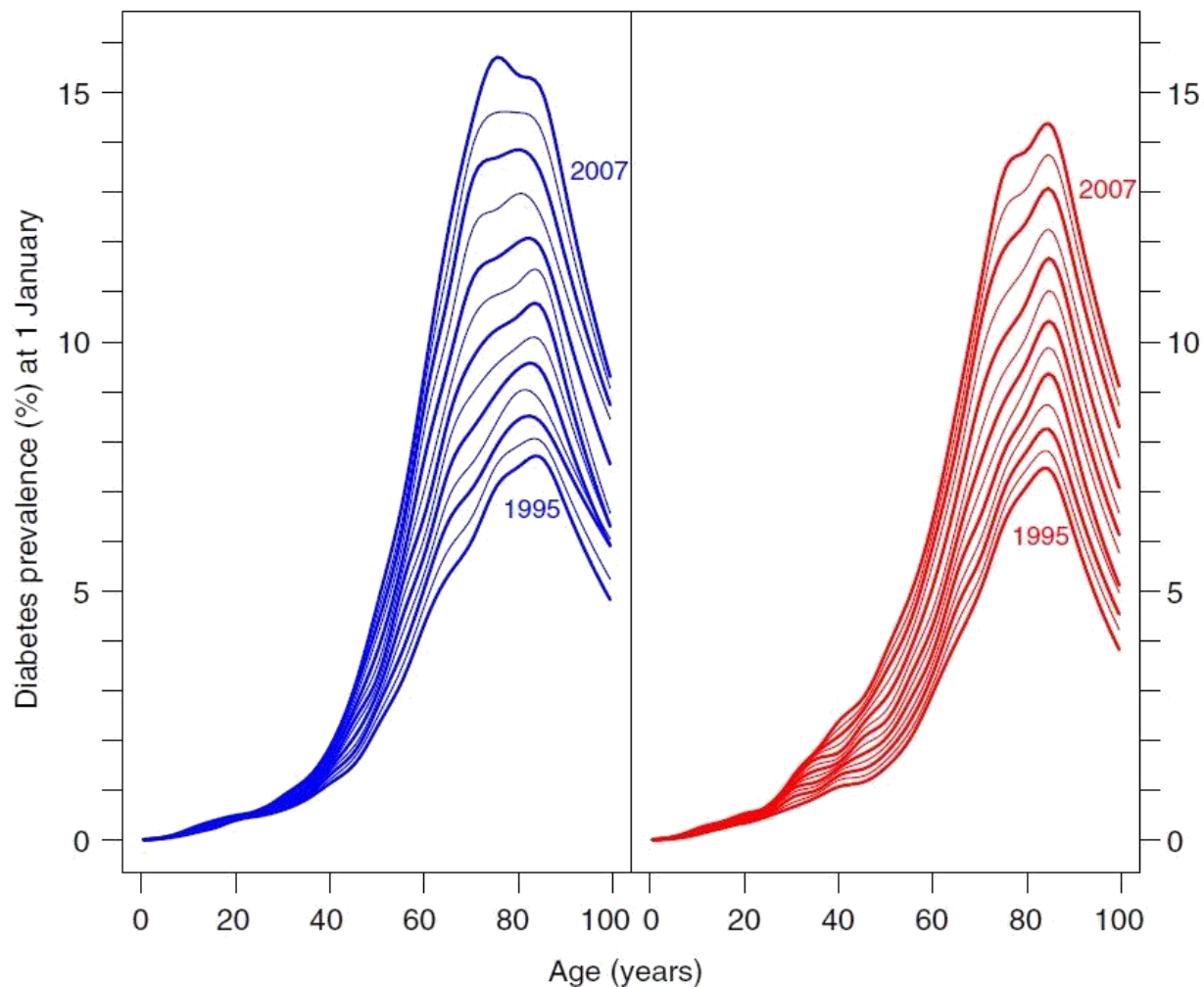
Il tasso di ricovero ordinario nei diabetici è del 62% più alto rispetto ai non diabetici

Le prestazioni sanitarie superano del 60% quelle dei non diabetici

Prevalenza del diabete in funzione del sesso e dell'età



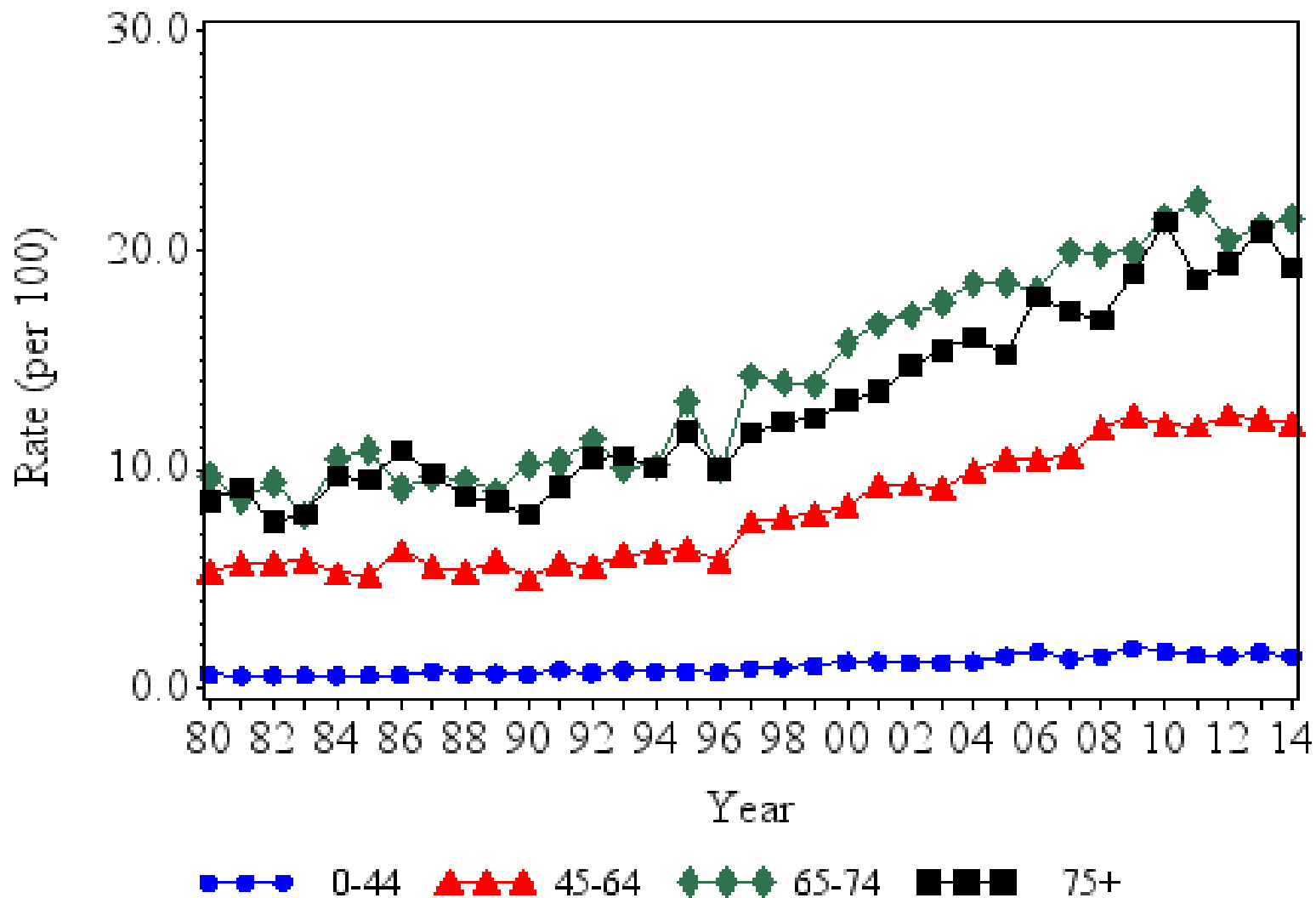
Prevalenza Diabete



Prevalenza per sesso ed età dal 1995 al 2007 (Registro Danese)

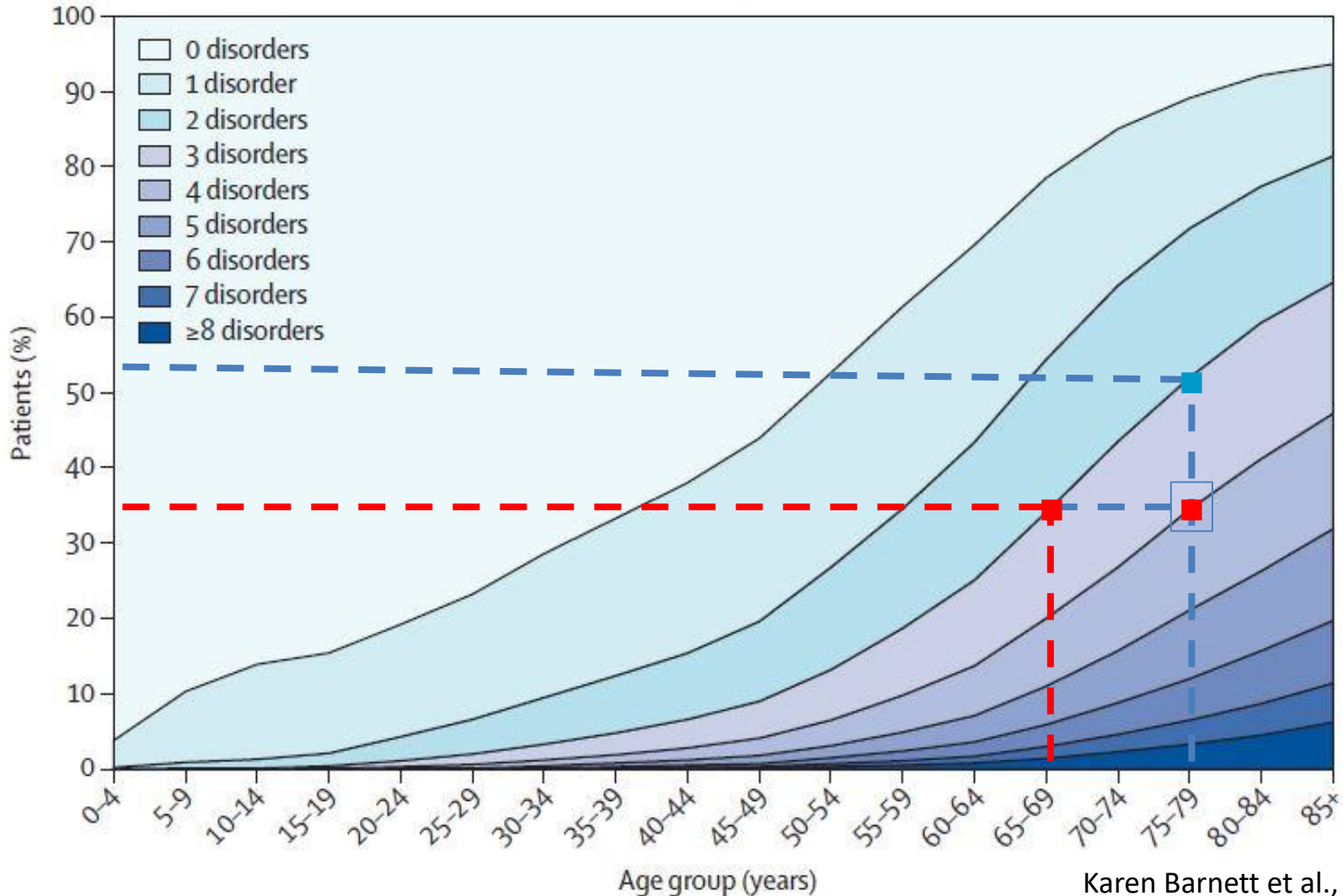
Prevalenza Diabete

Prevalenza del diabete nelle varie fasce di età negli US nel periodo 1980-2014



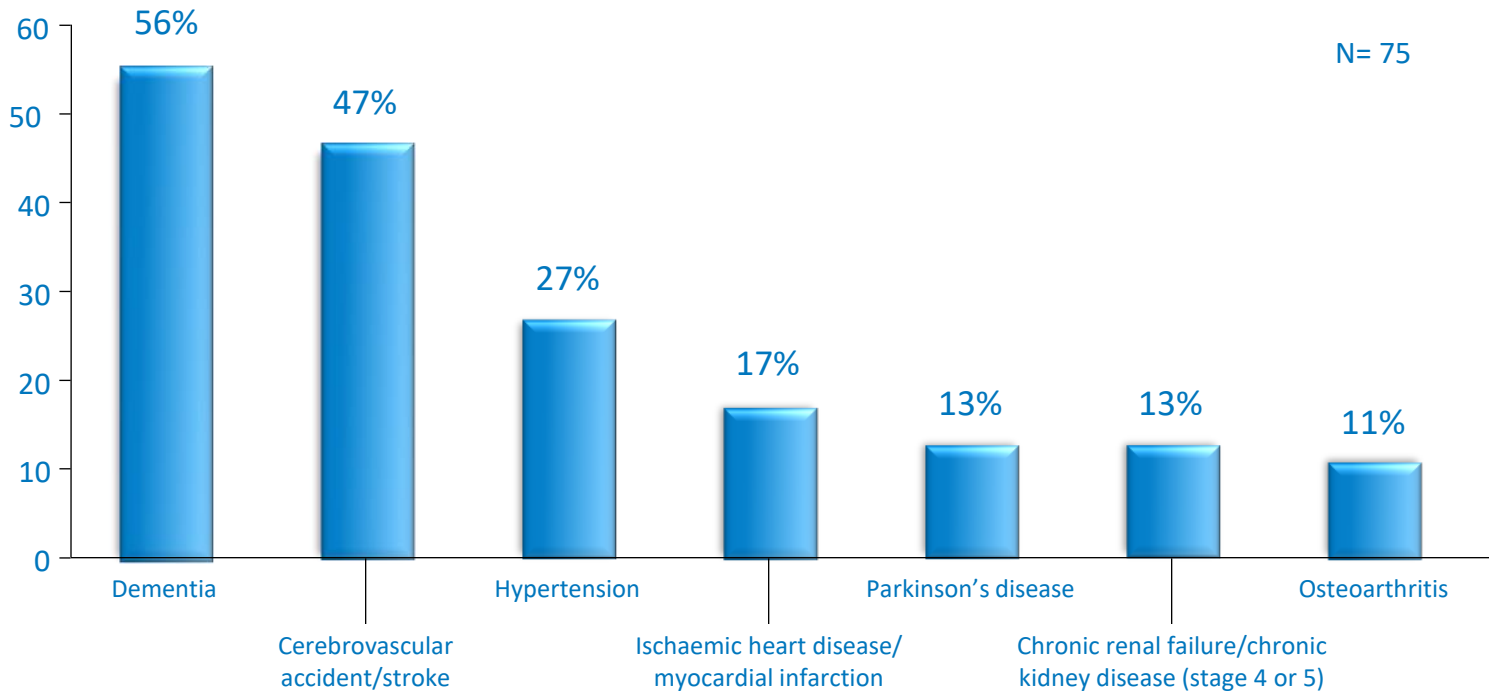
Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study

Karen Barnett, Stewart W Mercer, Michael Norbury, Graham Watt, Sally Wyke, Bruce Guthrie



Patients with type 2 diabetes in nursing homes frequently have many comorbidities

Most frequent recorded comorbidities



In this study, each individual had a mean of four comorbidities

DMt2 and The Chronic Inflammatory Syndrome

DMt2

IR

**IL-6, IL-1, TNF- α , ROS
Oxidative Damage
Systemic Inflammation**

Acute phase proteins
CRP
Mitochondrial dysfunction

Cognitive Dysfunction

**Skeletal muscle Weakness
Sarcopenia**

CV Diseases

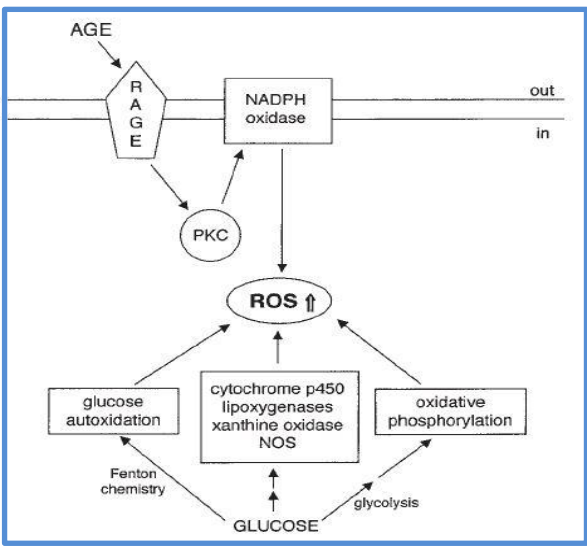
COPD

Osteoporosis

Nephropathy

Neuropathy

Retinopathy



Advances in Geroscience: Impact on Healthspan and Chronic Disease Perspective

Chronic Inflammation (Inflammaging) and Its Potential Contribution to Age-Associated Diseases

Claudio Franceschi^{1,2} and Judith Campisi^{3,4}

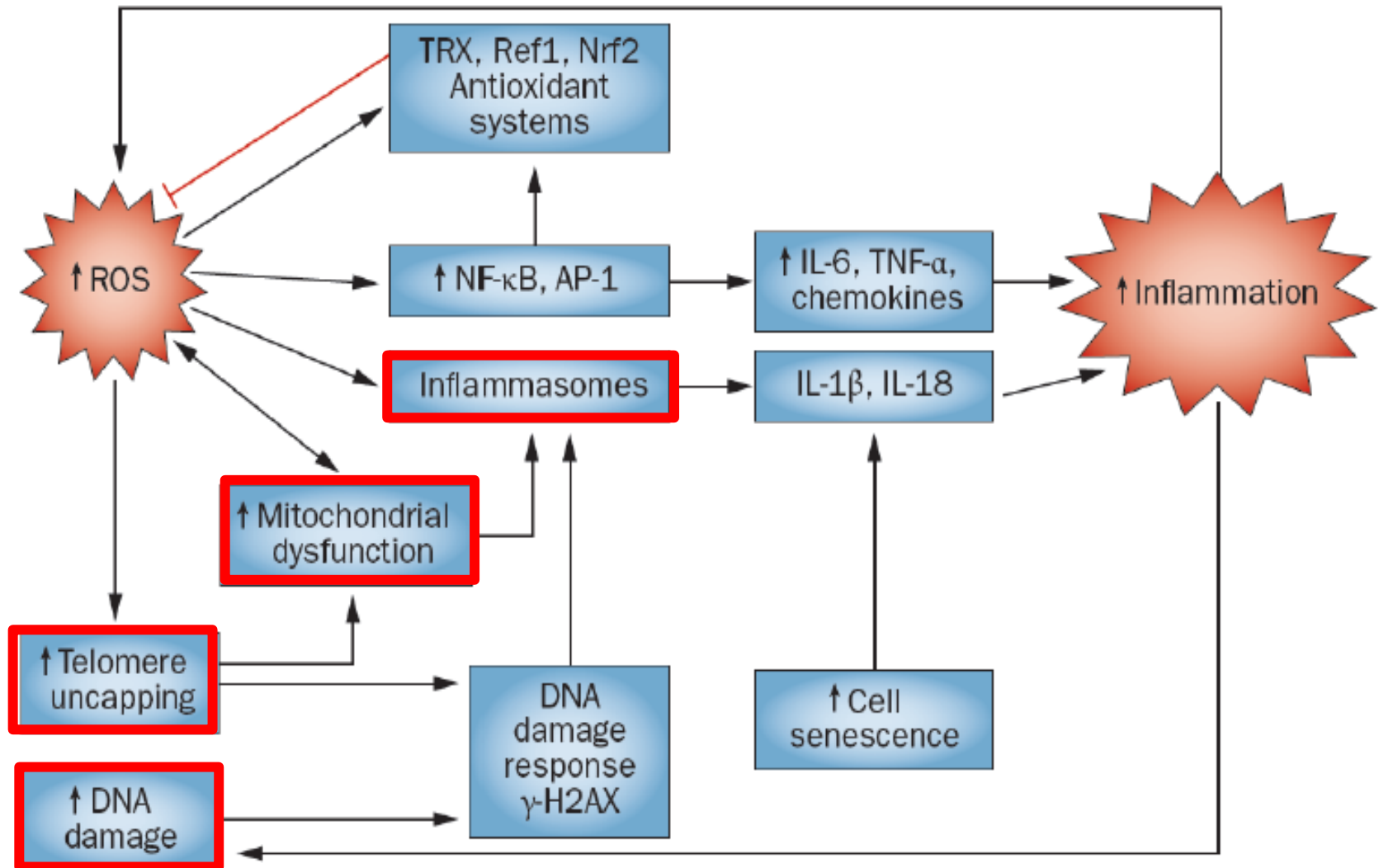
¹DIMES, Department of Experimental, Diagnostic and Specialty Medicine and CIG, Interdepartmental Center “Luigi Galvani”,
University of Bologna, Italy.

²IRCCS Institute of Neurological Sciences, and CNR-ISOF, Bologna, Italy.

³Buck Institute for Research on Aging, Novato, California.

⁴Life Sciences Division, Lawrence Berkeley National Laboratory, California.

ROS and INFLAMMAGING



Aging



Metabolic Danger signals (DAMP)
Ceramide, free cholesterol, uric acid, lipid peroxidation

Mitochondrial Dysfunction

PAMPs: Infections, gut microbiota

META-FLAMMAGING

Sarcopenia

Diabetes

Dementia/AD

Immune Dysfunction

Cancer

CVD

Bone Loss

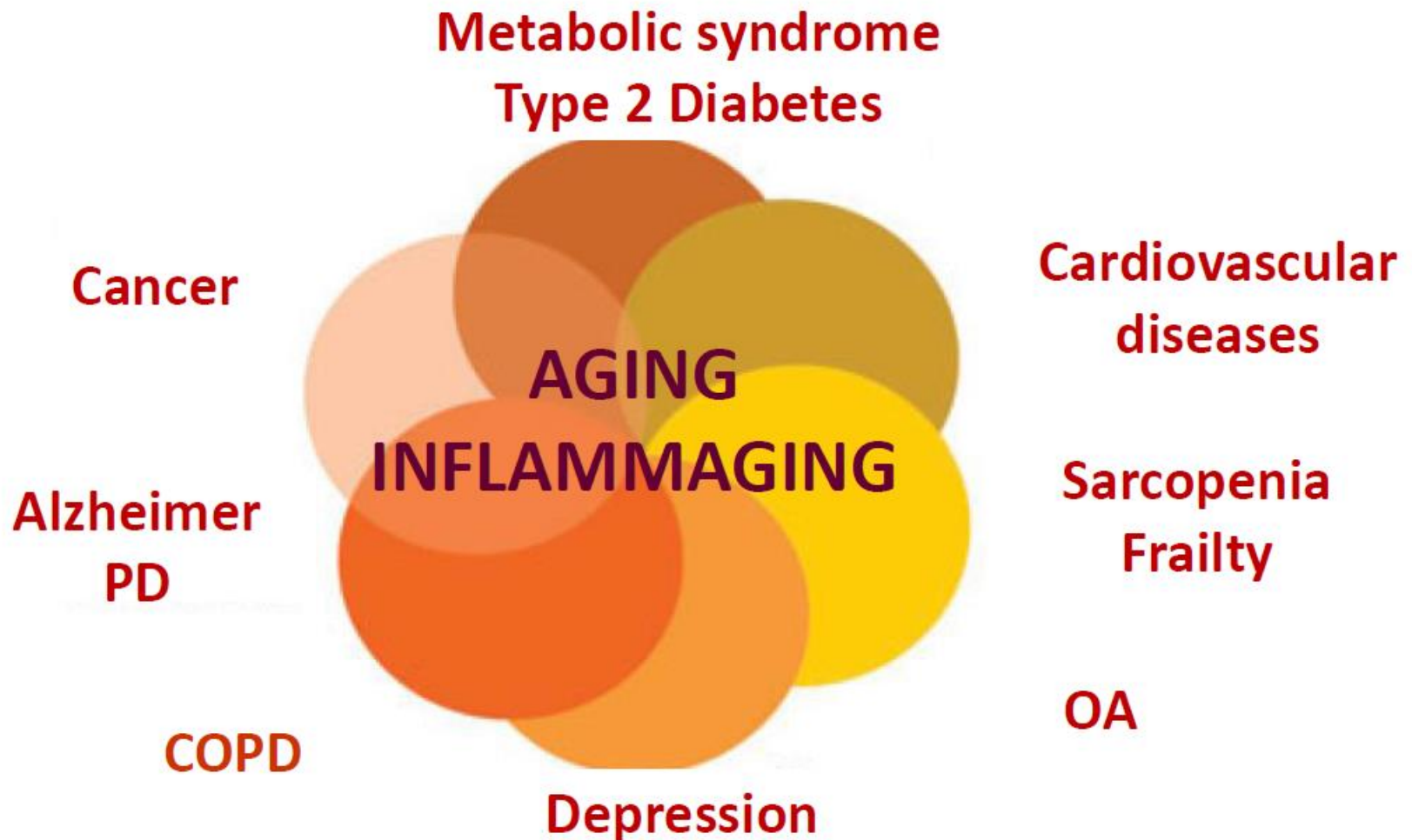
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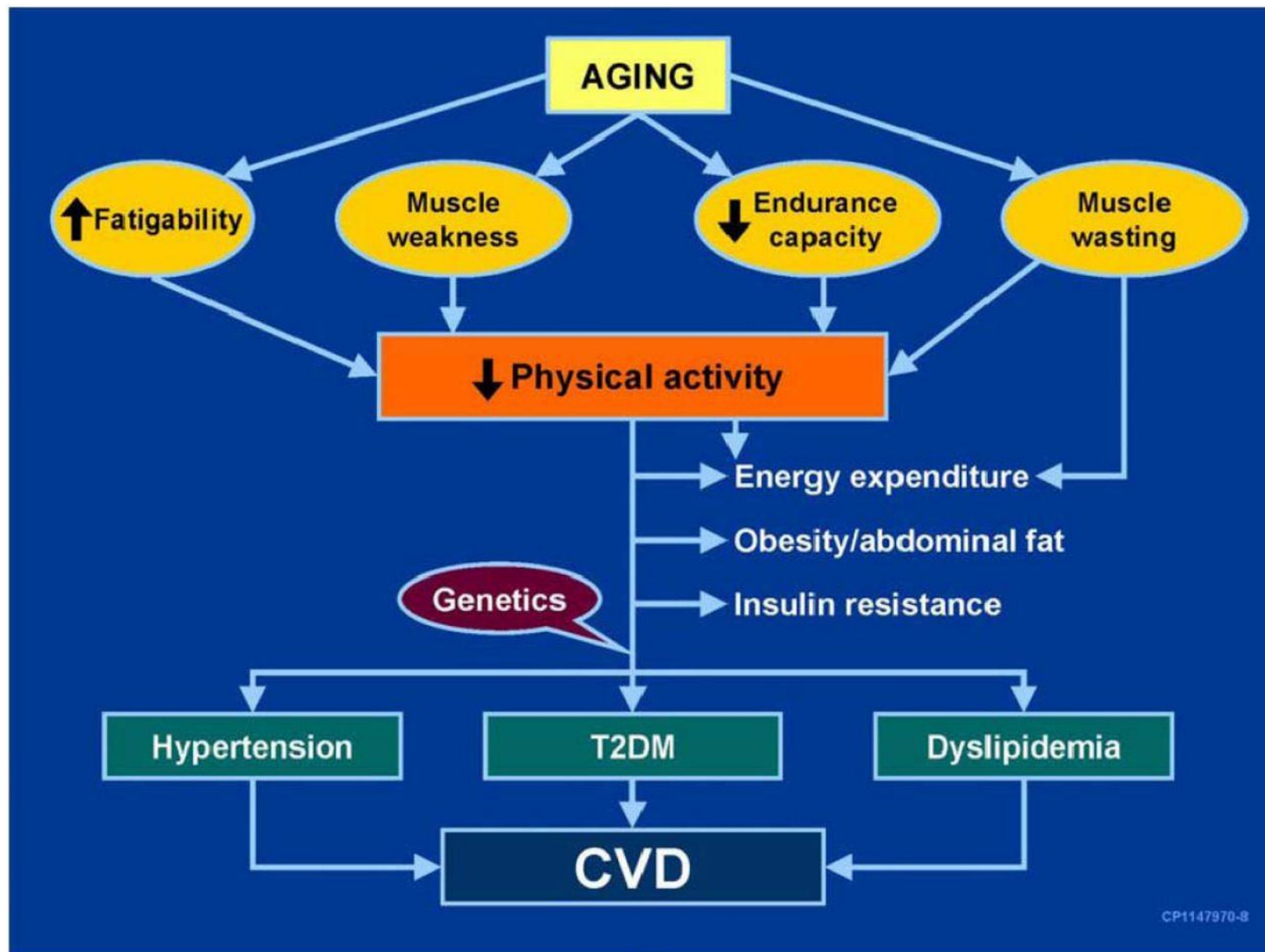


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Functional Decline & Reduced Healthspan

The Inflammaging Theory of Aging



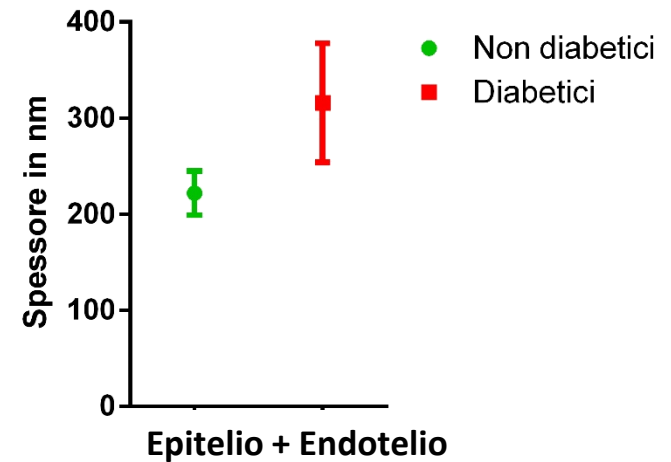
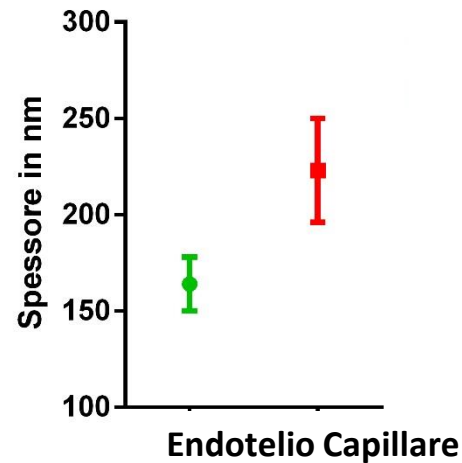
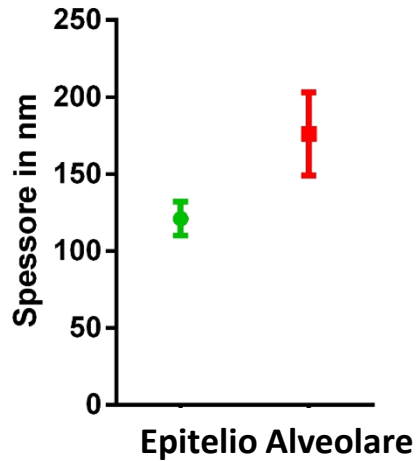
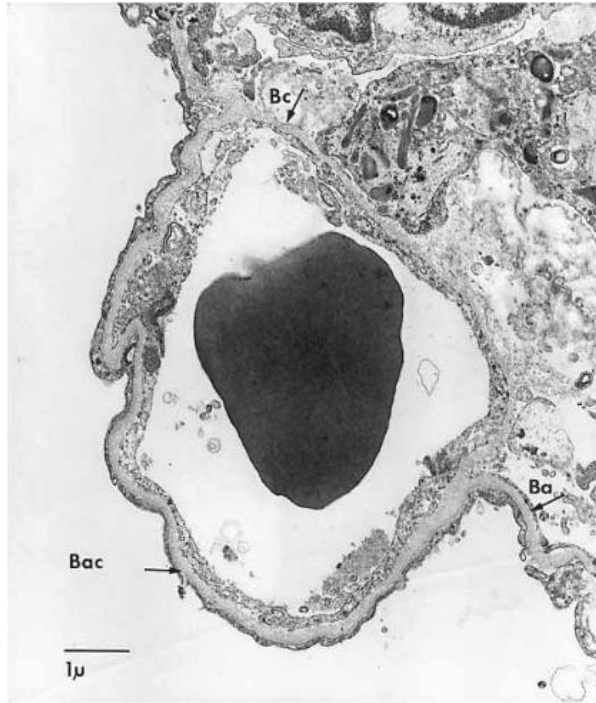


CP1147970-8



- **Significativa riduzione dei test di funzionalità polmonare nei pz con DM 2 non affetti da BPCO**
- **Correlazione inversa tra grado di insulino-resistenza e test di funzionalità respiratoria**
- **Grado di ipertensione polmonare più severo nei pazienti con BPCO e DM 2**
- **Il DM 2 è un fattore di rischio per lo sviluppo di patologie polmonari**
- **La glicemia al momento del ricovero predice l'outcome respiratorio in pazienti con BPCO**

Effetti fisiopatologici del Diabete sul polmone



Hyperglycemia Predicts Persistently Lower Muscle Strength With Aging

Kalyani RR et al., Diabetes Care, 2015

- 984 pazienti di età compresa tra I 25 ed 96 anni
- Follow up fino a 7.5 anni

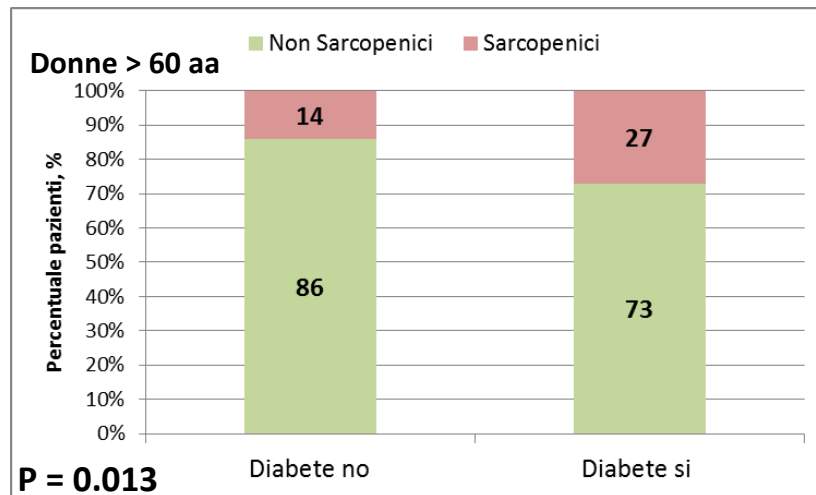
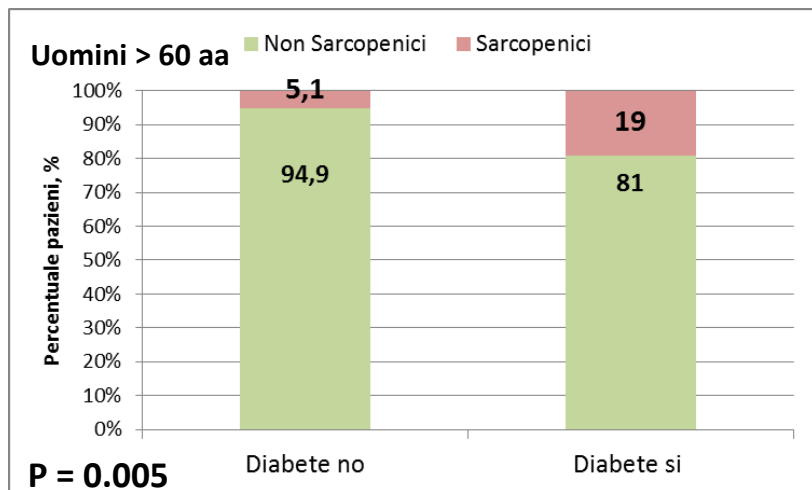
Hyperglycemia is associated with persistently lower muscle strength with aging, but this effect may be mediated, at least in part, by peripheral neuropathy.

Prevalence and Determinant Factors of Sarcopenia in Patients With Type 2 Diabetes

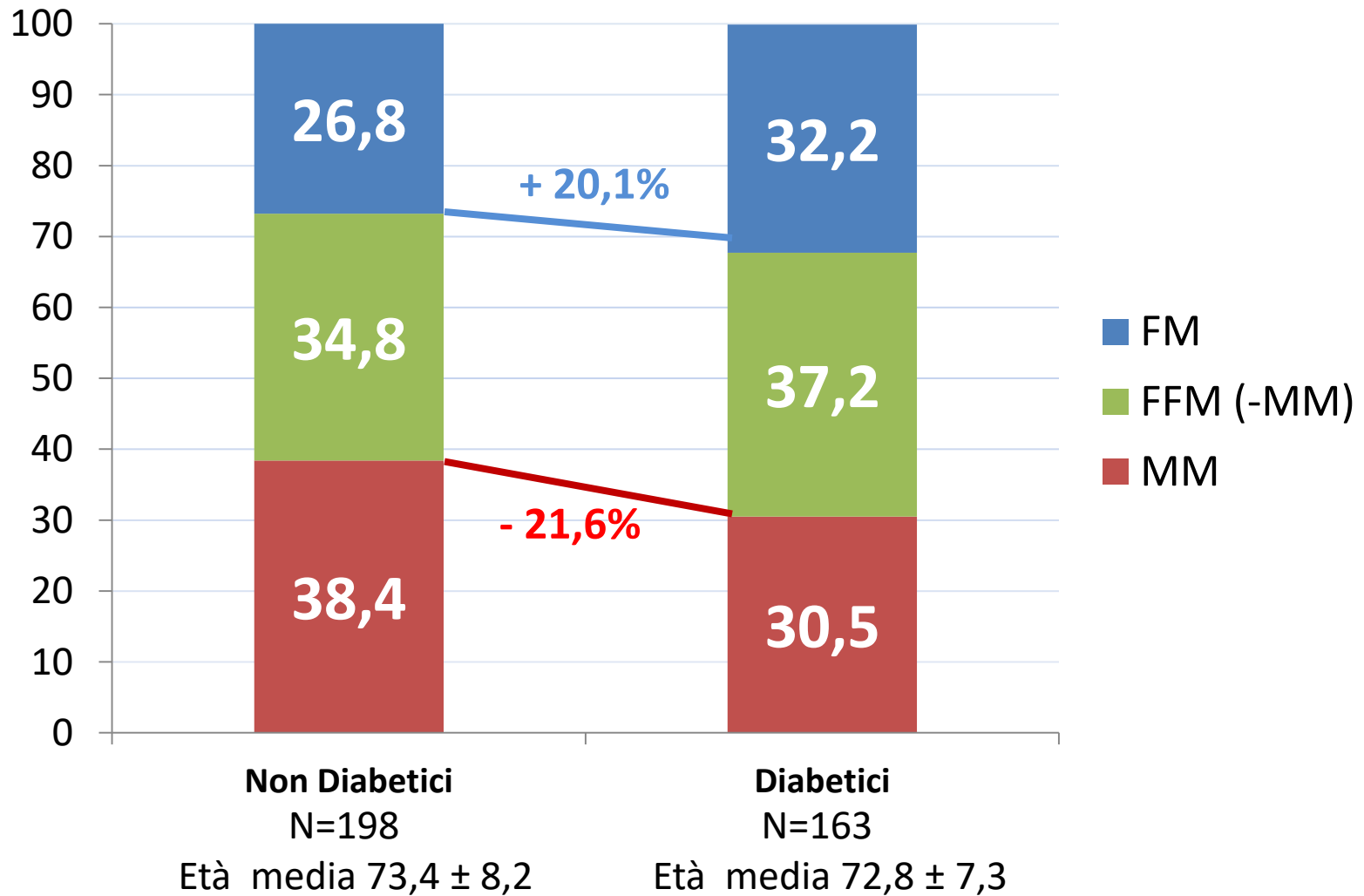
The Korean Sarcopenic Obesity Study (KSOS)

Kim TM et al., Diabetes Care, 2010

Il diabete aumentava il rischio di sarcopenia di circa 3 volte rispetto a soggetti non diabetici

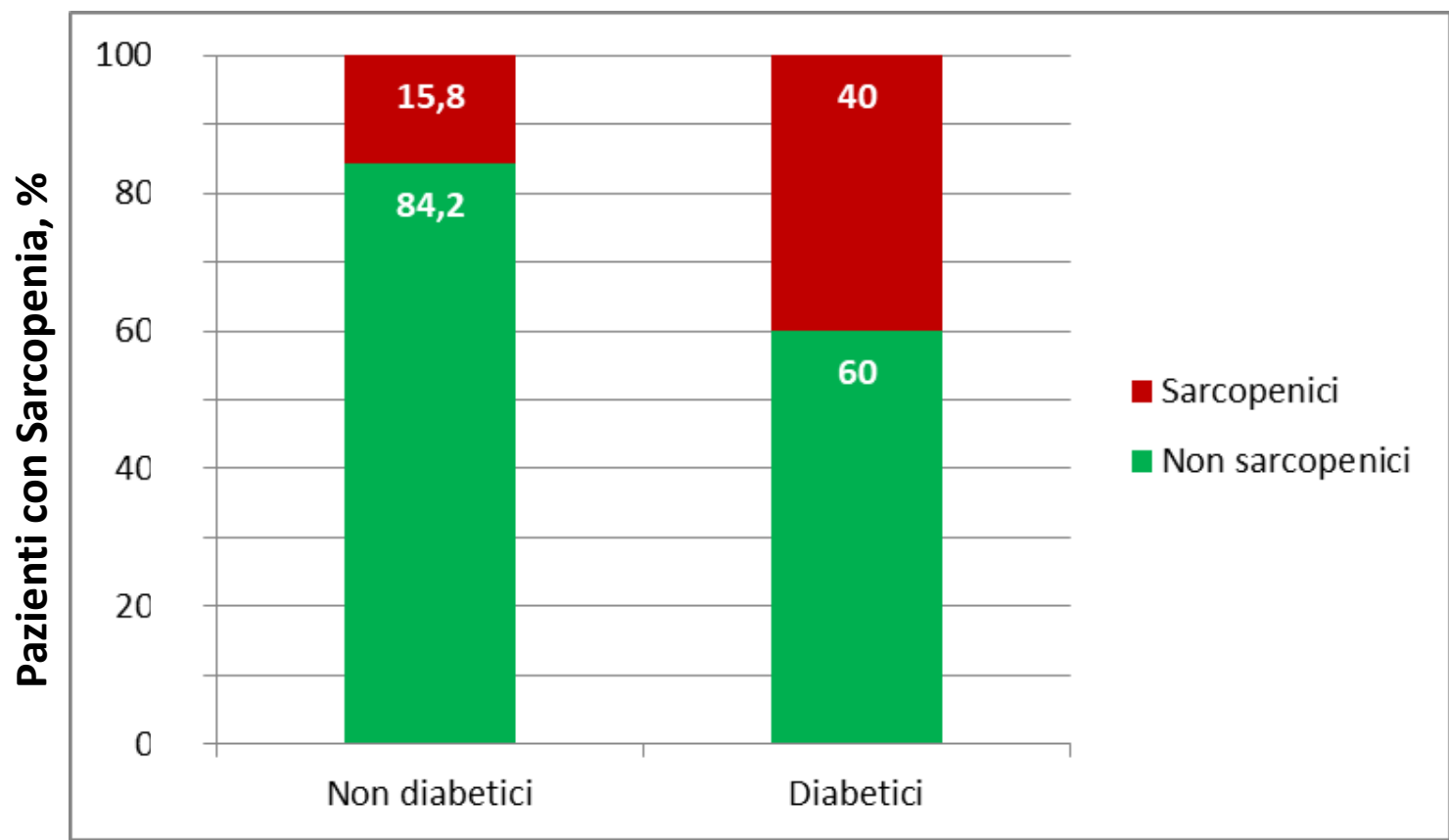


Diabete e composizione corporea



Prevalenza della Sarcopenia in pazienti con o senza diabete

182 pazienti di cui il 40,8% era diabetico.

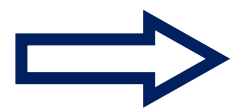


n = 98
Età media = 76,6 ± 7,3

n = 84
Età media = 74,8 ± 6,3

Diabete

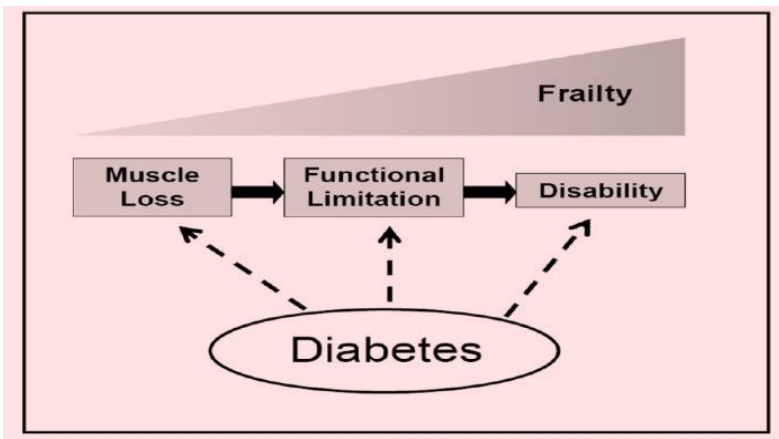
- Alterazioni metaboliche
- Malattie cardiovascolari
- Invecchiamento
- Declino cognitivo
- Riduzione performance fisiche



- Sarcopenia
- Malnutrizione
- Disabilità fisica



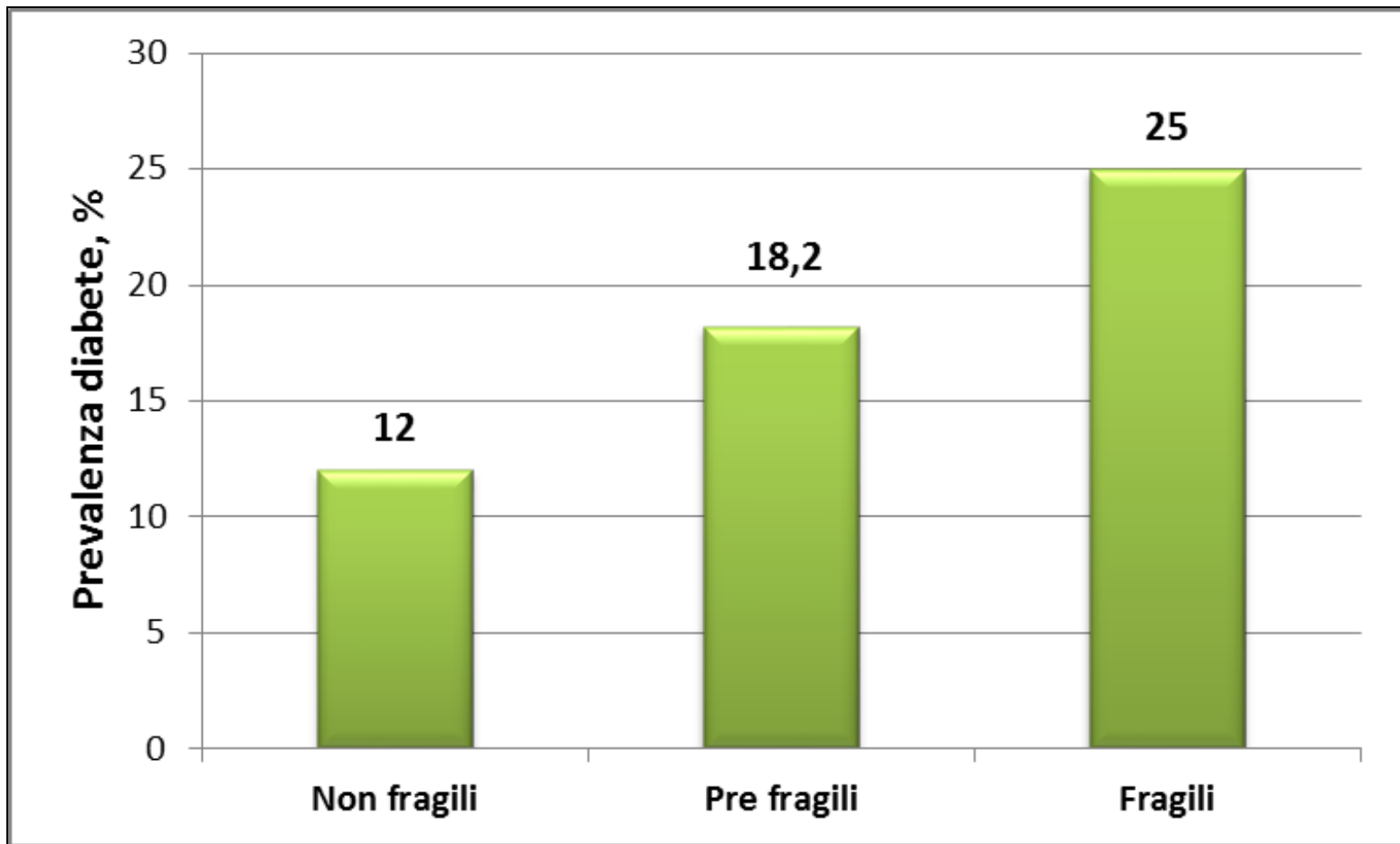
FRAGILITA'



**La malnutrizione aumenta il rischio di fragilità di 4 volte
(odds ratio [OR]: 3.7; 95% CI: 1.4–9.9)**

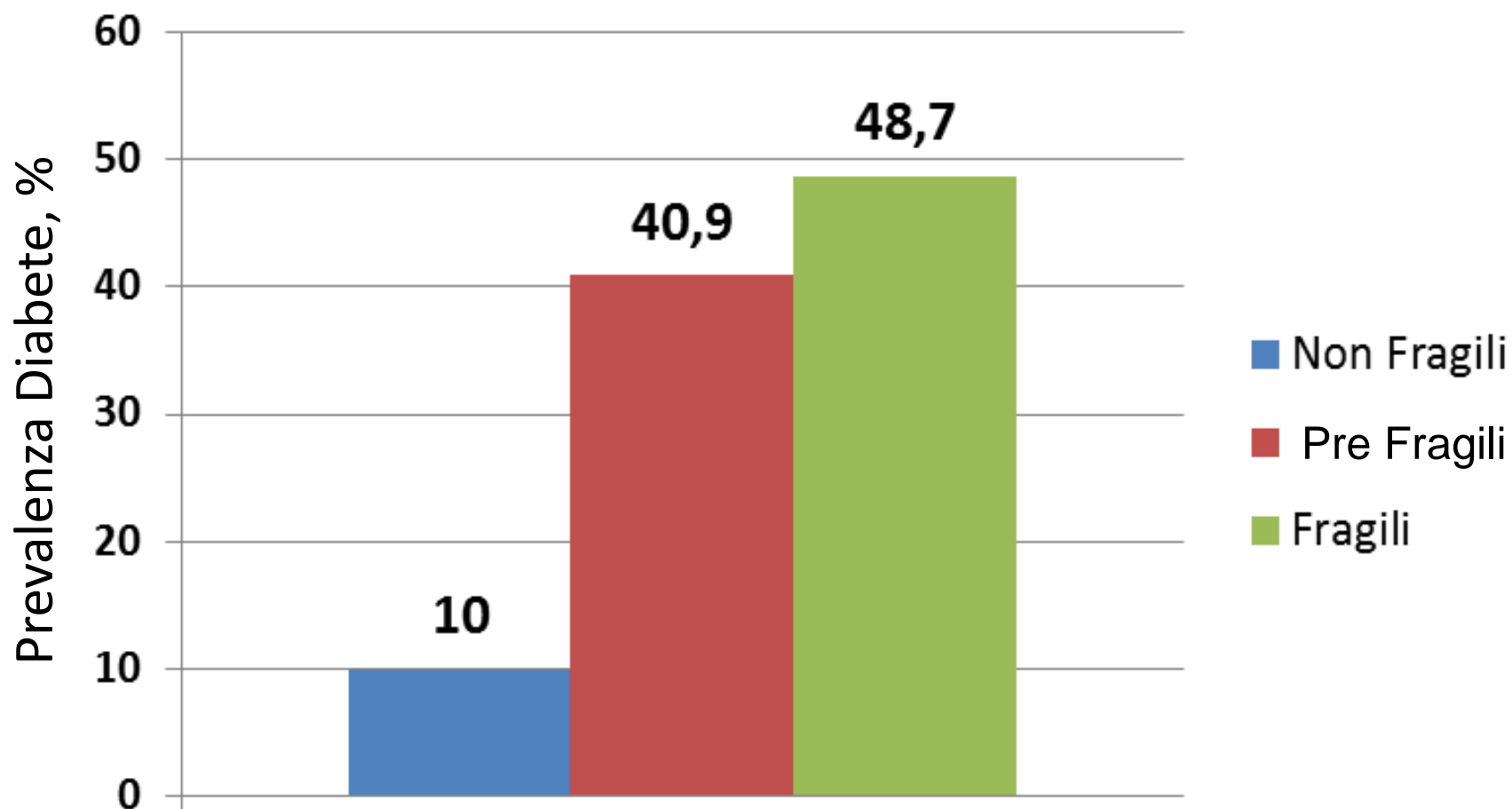
Review

Care of elderly patients with diabetes mellitus: A focus on frailty

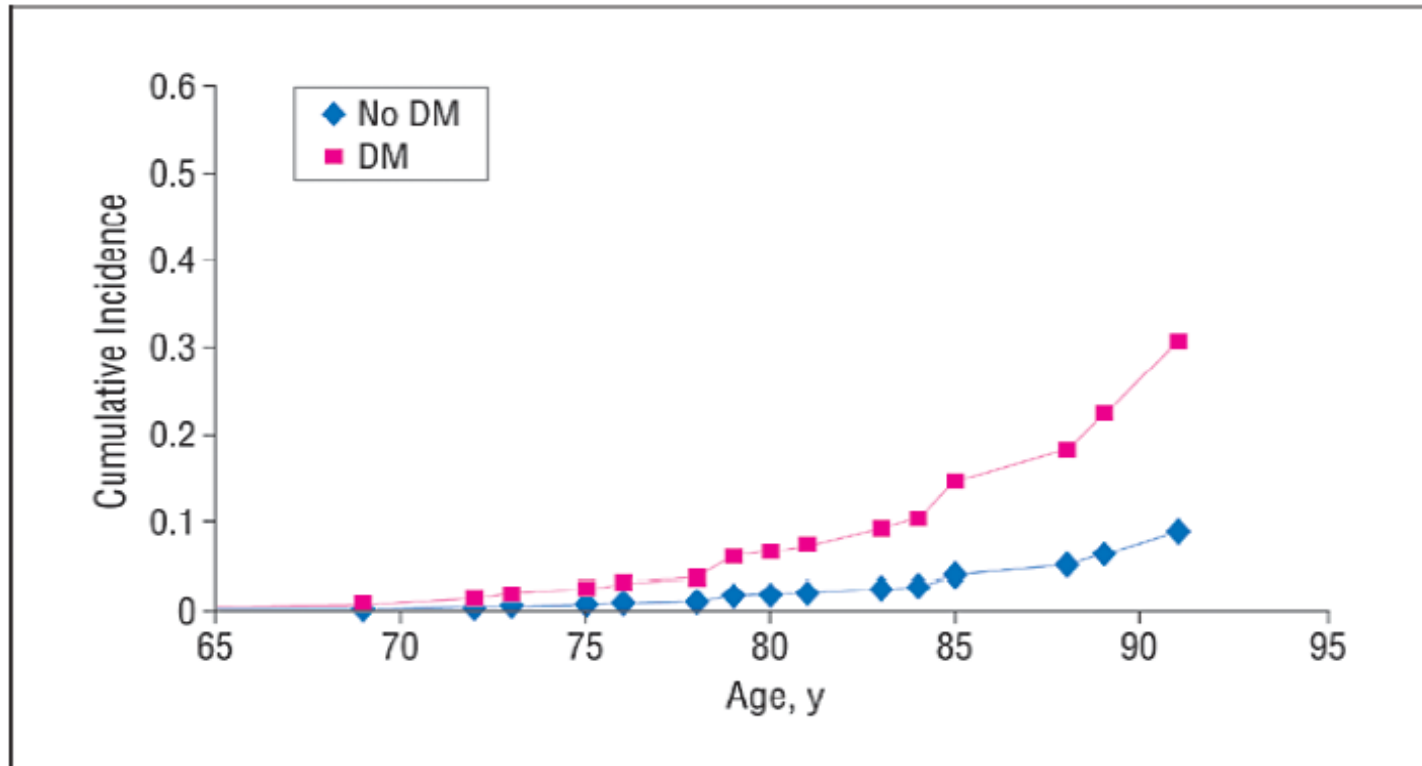


Prevalenza del Diabete in base allo stato di Fragilità

182 pazienti di cui il 40,8% era diabetico.

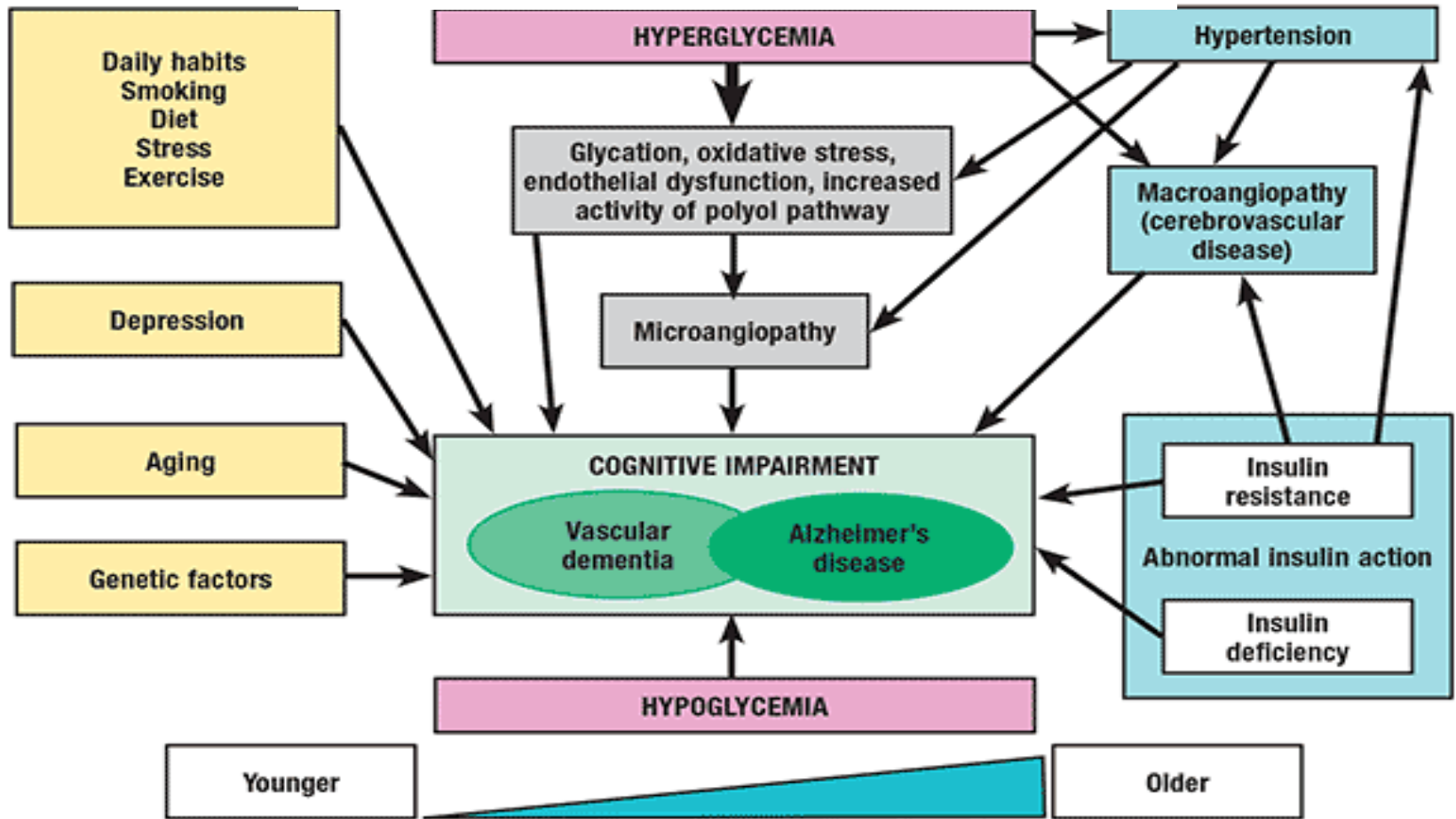


Diabetes Mellitus and Risk of Developing Alzheimer Disease Results From the Framingham Study



Cumulative incidence of Alzheimer disease in low-risk group: comparison of persons with and without diabetes mellitus (DM), adjusted for age and sex.

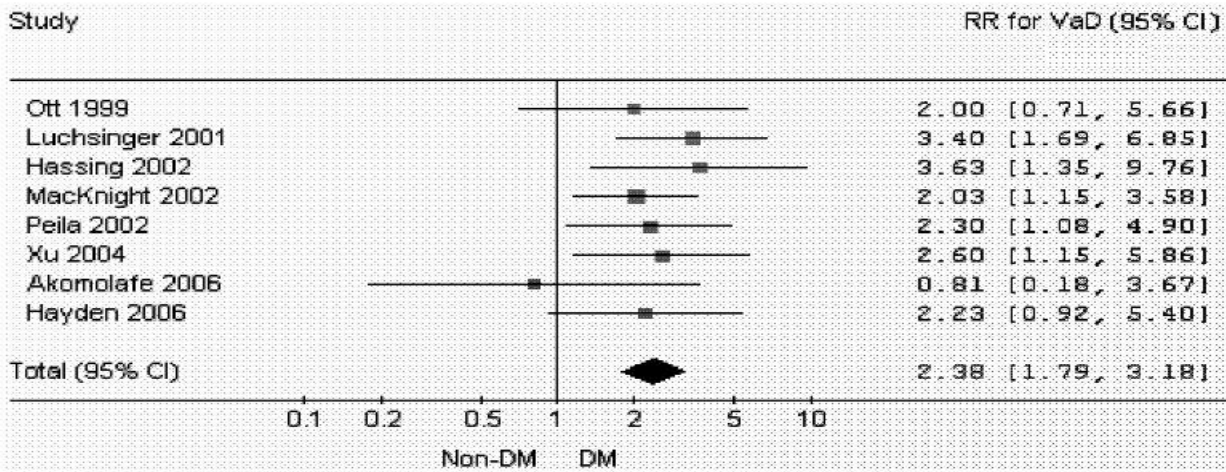
Mechanistic Contribution to Cognitive Impairment in Diabetes Mellitus



Diabetes and the Risk of Multi-System Aging Phenotypes: A Systematic Review and Meta-Analysis

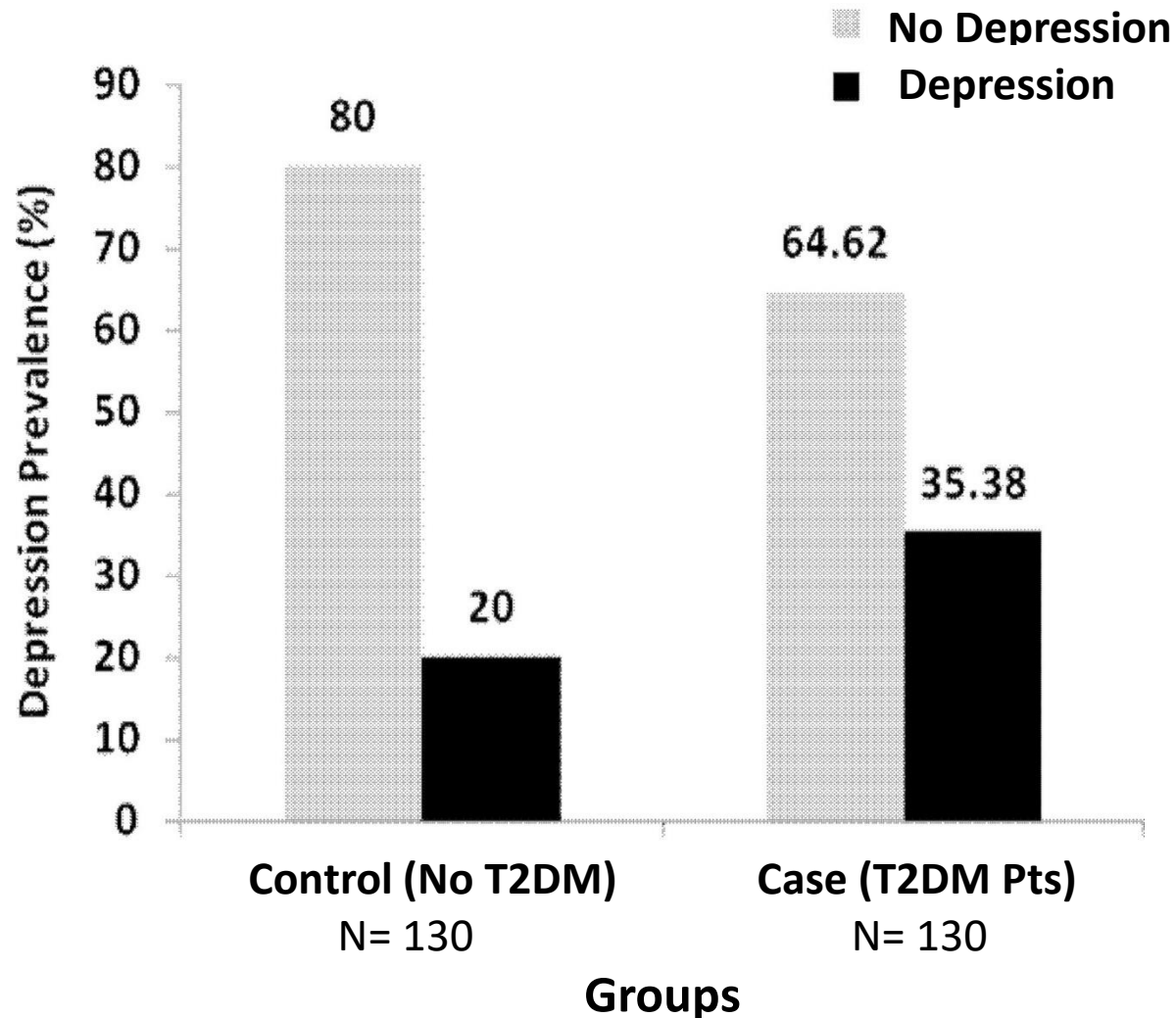
Feng-Ping Lu^{1,2}, Kun-Pei Lin^{1,3}, Hsu-Ko Kuo^{1,4,5*}

MEDLINE (1950 to November 2007) and PSYCINFO (1967 to November 2007)



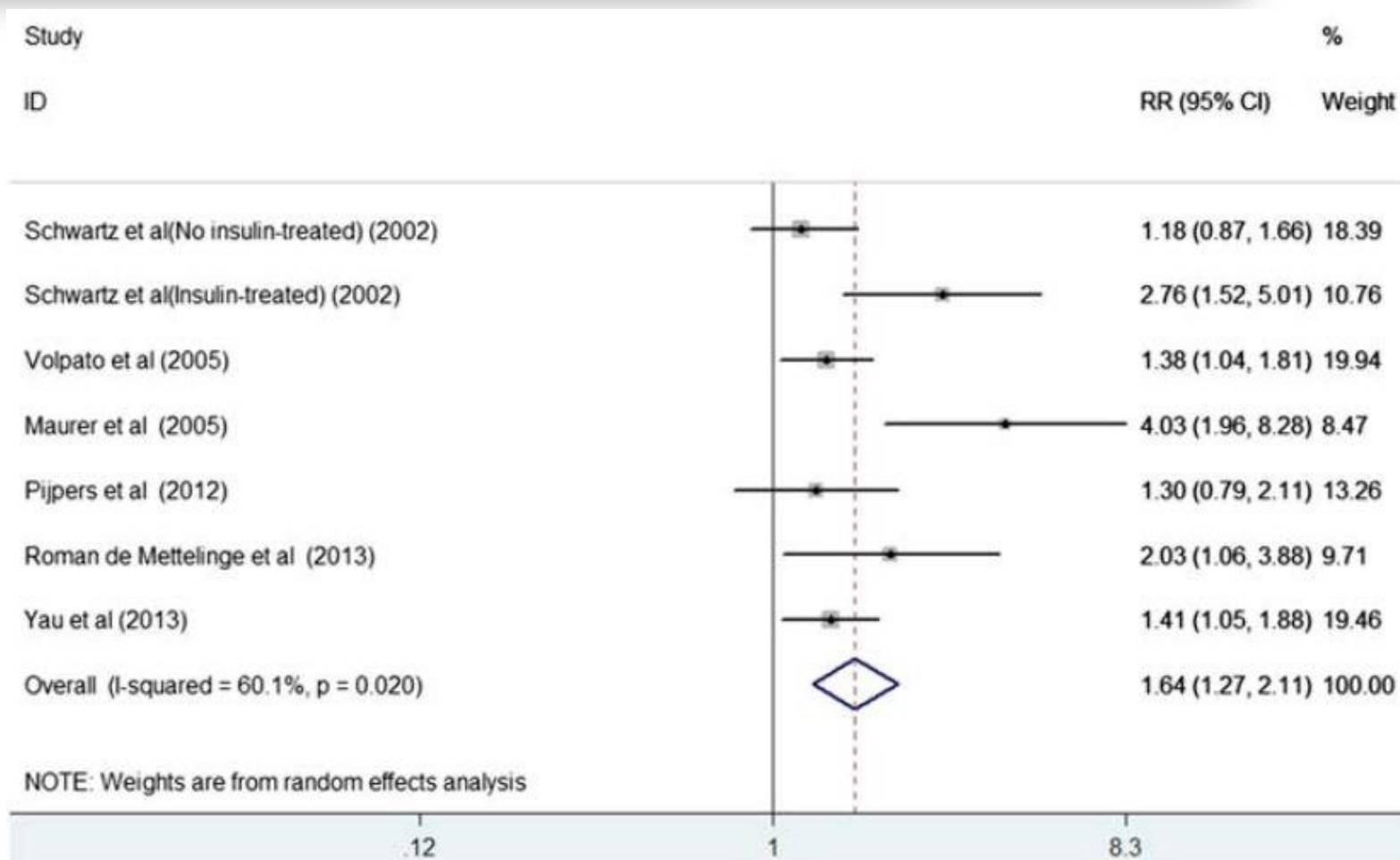
Not certified by peer review

Prevalence of Depression in Patients with Type 2 Diabetes



Diabetes mellitus and risk of falls in older adults: a systematic review and meta-analysis

YU YANG, XINHUA HU, QIANG ZHANG, RUI ZOU

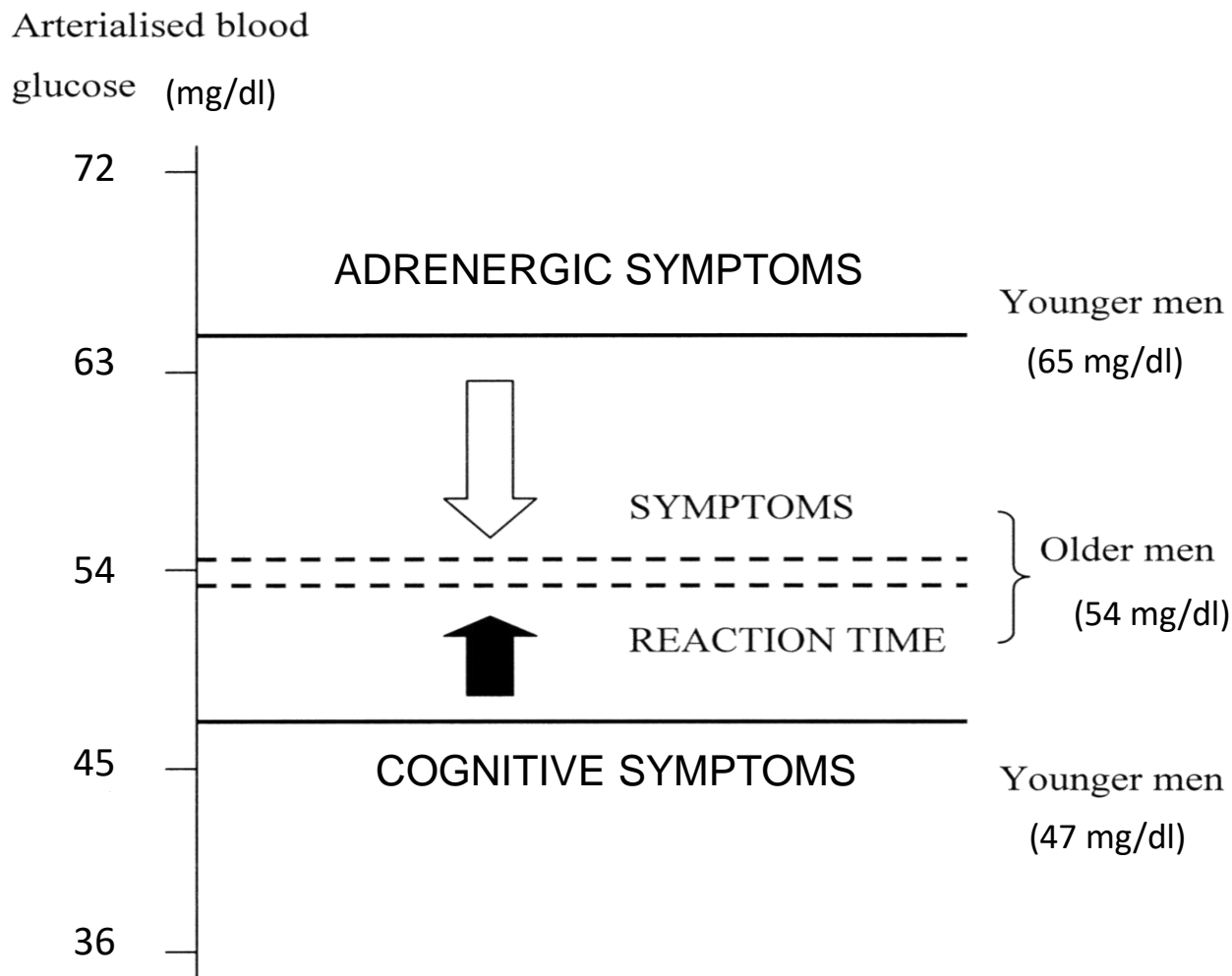


Risk factors for hypoglycaemia in older patients

Risk factors for hypoglycaemia of particular relevance to older patients with type 2 diabetes mellitus

- Polypharmacy
- Insulin / Sulfonylureas therapy
- Recent hospitalisation
- Poor nutrition or fasting
- Intercurrent illness
- Chronic liver, renal or cardiovascular disease
- Cognitive impairment/dementia

Glycemic threshold for adrenergic symptoms and cognitive dysfunction in young and elderly diabetes



Hypoglycemic Episodes and Risk of Dementia in Older Patients with Type 2 Diabetes Mellitus JAMA, 2009

Rachel A. Whitmer¹, Andrew J. Karter¹, Kristine Yaffe², Charles P. Quesenberry Jr.¹, and Joseph V. Selby¹

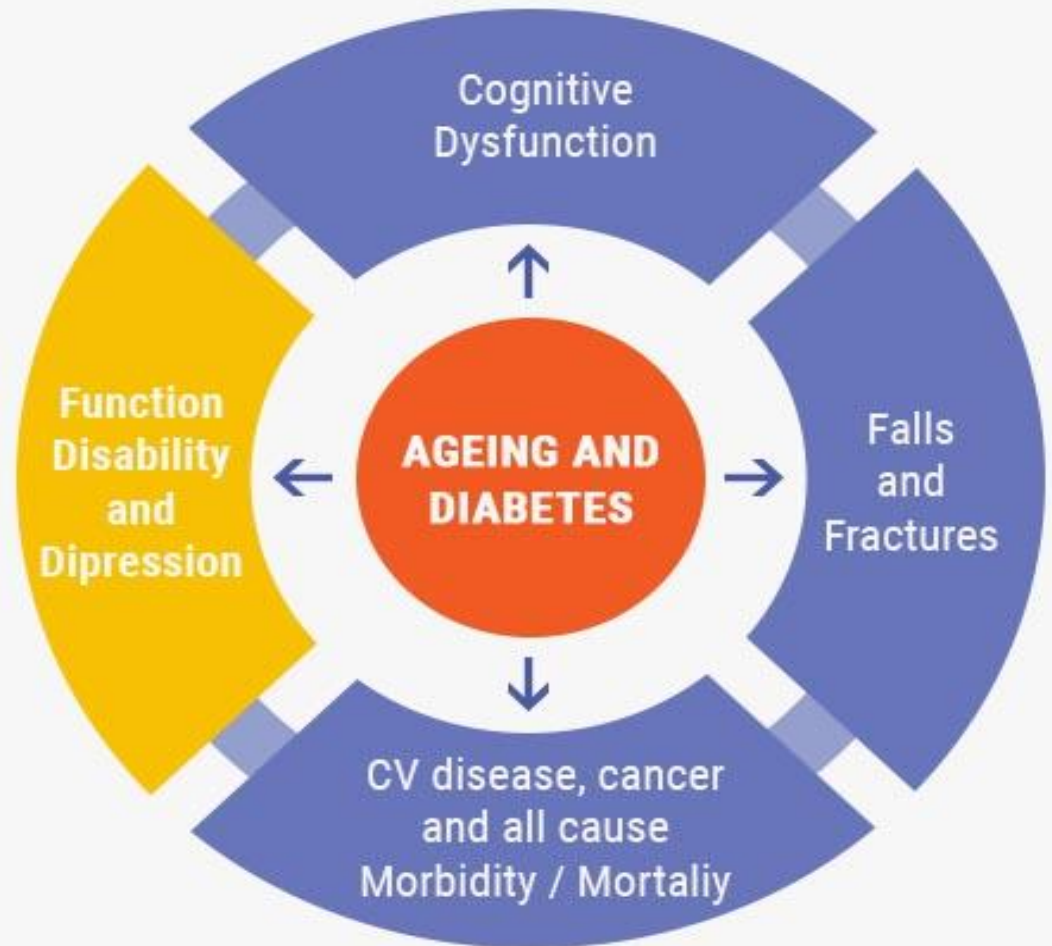
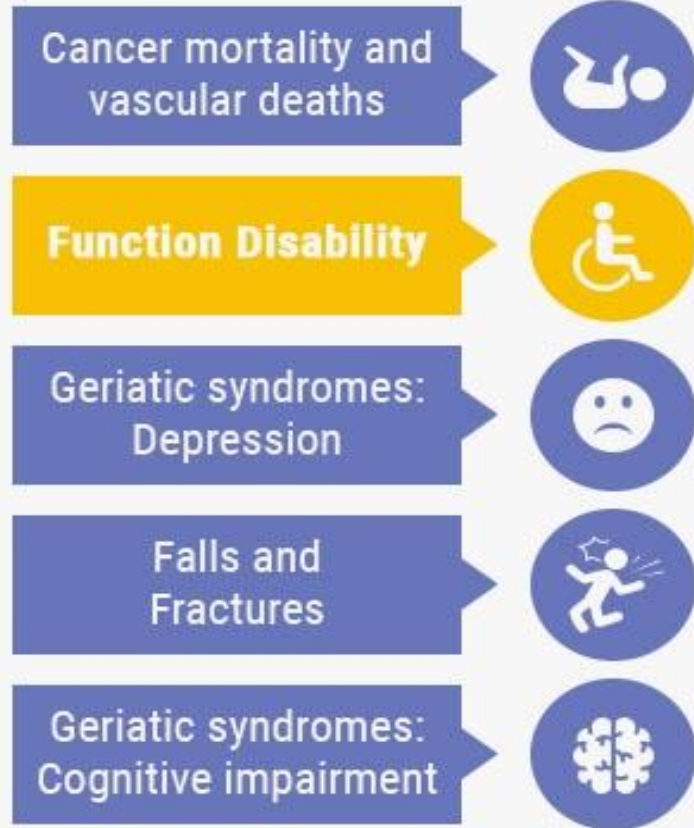
No. of Antecedent Severe Hypoglycaemic Episodes	Adjusted Hazard Ratio* for Incident Dementia (95% CI)
≥1	1.44 (1.25-1.66)
1	1.26 (1.10-1.49)
2	1.80 (1.37-2.36)
≥3	1.94 (1.42-2.64)



THE OLDER PATIENT WITH DIABETES



Older person with diabetes are at higher risk than those without diabetes of:



Cognitive dysfunction should be added to the list of the COMPLICATIONS OF DIABETES, along with Retinopathy, Nephropathy, Neuropathy and Cardiovascular disease.

Management of older patients with diabetes should go beyond control of hyperglycaemia

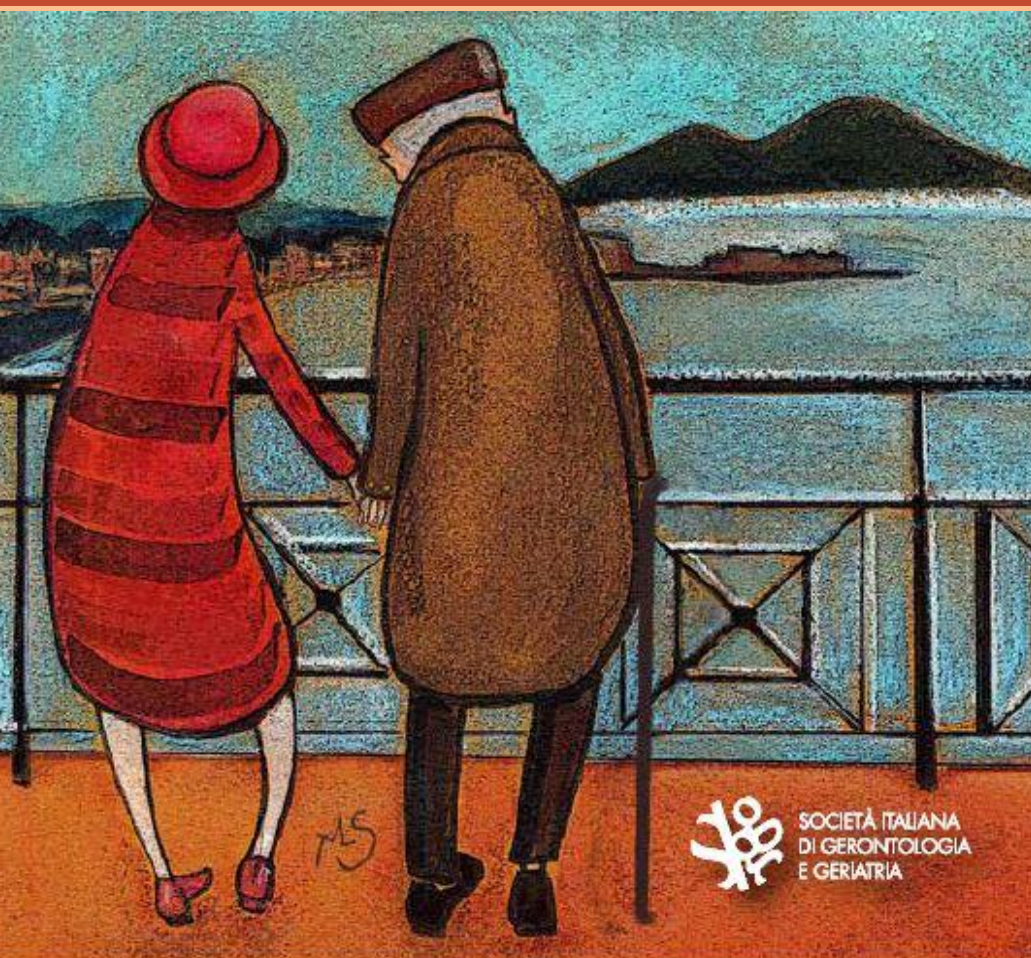
- **Functional impairments, falls/fractures**
- **Urinary incontinence**
- **Hypertension and cardiovascular complications**
- **Impaired cognitive function/depression**
- **Malnutrition/sarcopenia**
- **Diabetes-related disorders**
 - › **Foot disease**
 - › **Renal impairment**
 - › **Eye disease**

Prevention, screening and treatment of diabetic complications and geriatric syndromes should optimise overall health status and quality of life

62 CONGRESSO NAZIONALE SIGGG

INVECCHIAMENTO: SCENARIO 2.0

NAPOLI 2017
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Il paziente anziano complesso con diabete

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