Update su Osteoporosi ed Osteoartrosi nell'anziano

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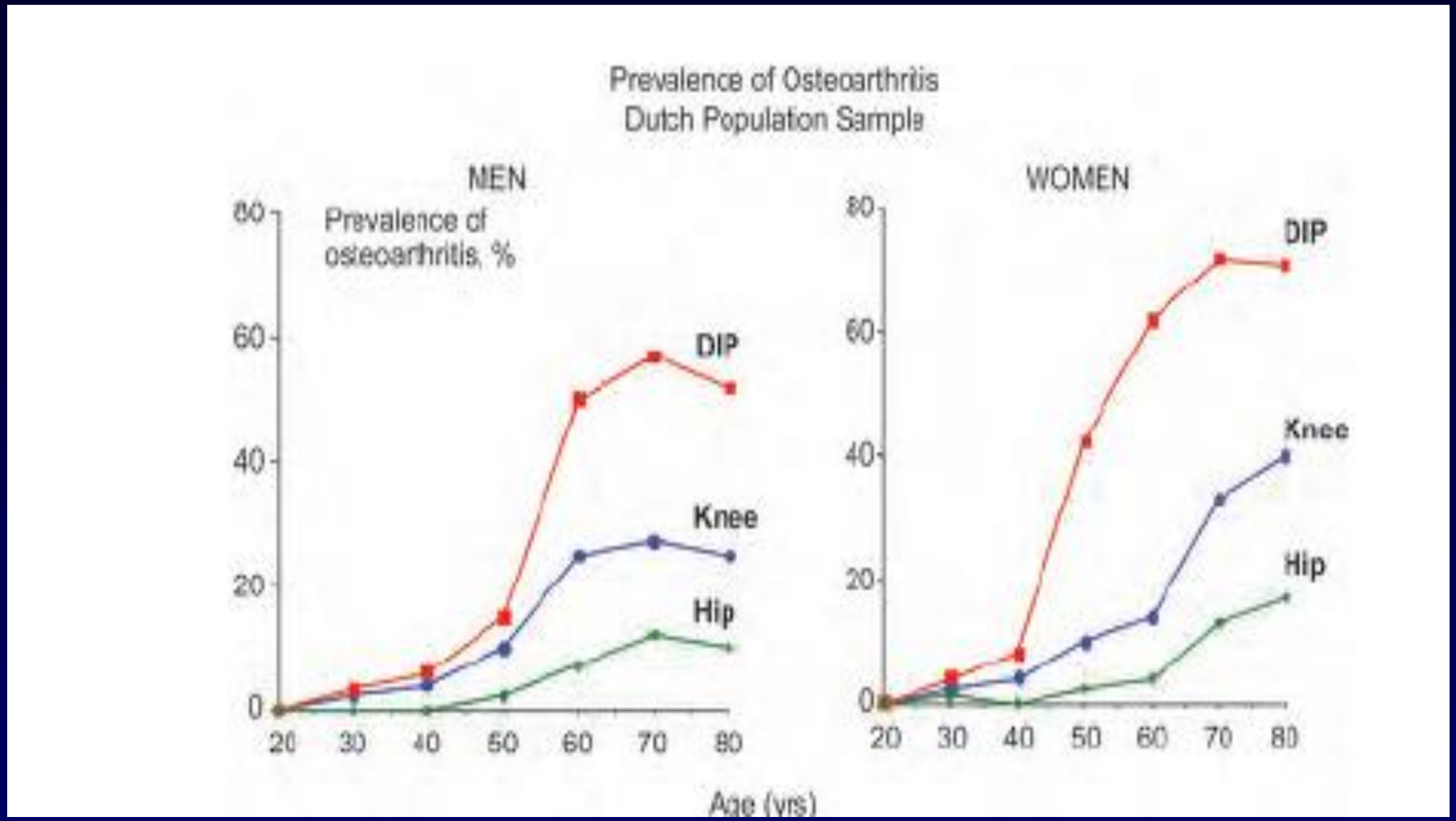
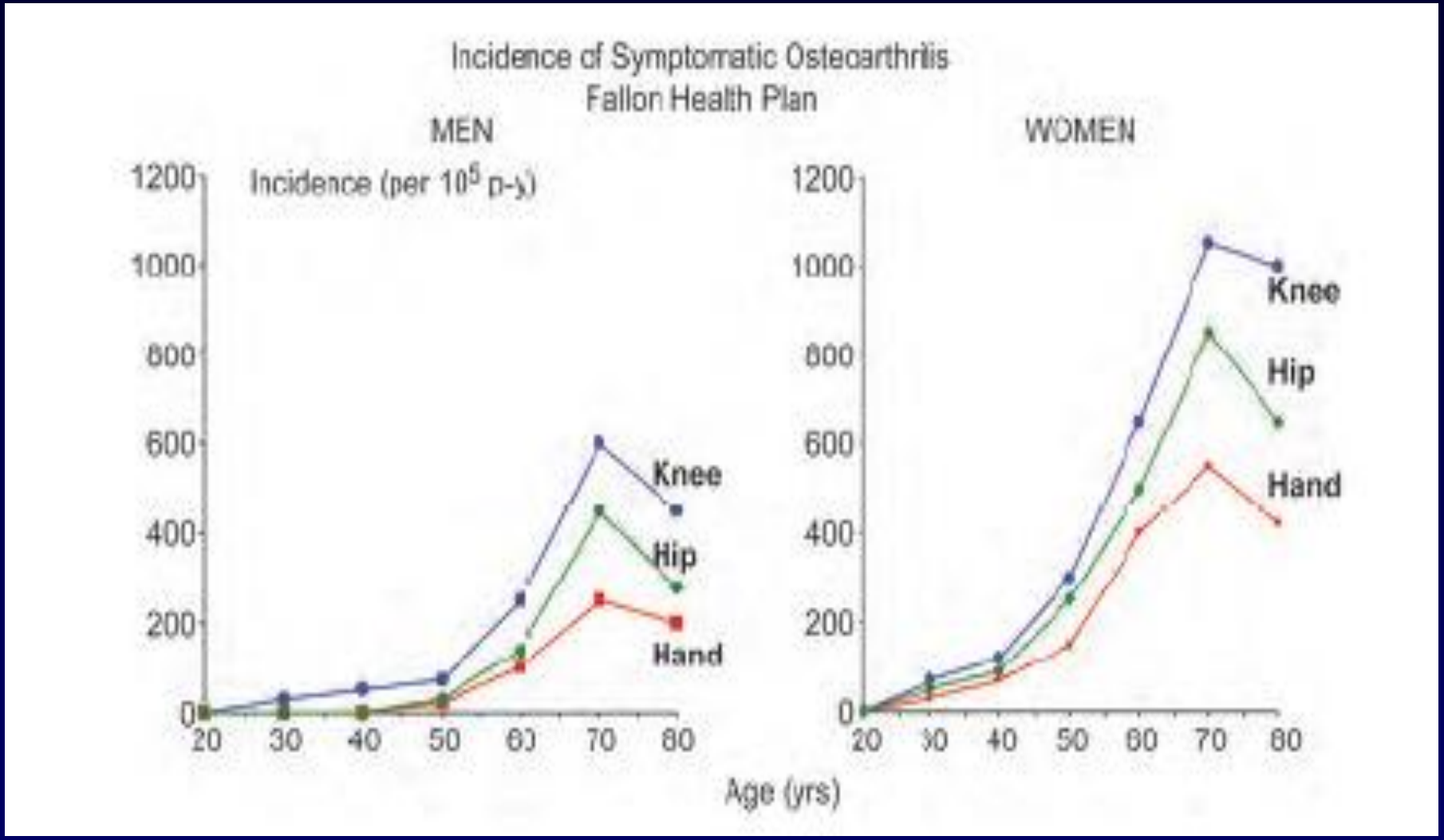
OSTEOARTROSI: QUALI ARTICOLAZIONI?

L'osteoartrosi è la forma più comune di artrite ed è una delle principali cause di morbilità, con limitazione nelle attività, disabilità fisica, eccesso di utilizzo di assistenza sanitaria e ridotta qualità della vita, soprattutto nei soggetti anziani



Cooper et al, Br Med Bulletin, 2013



Cooper et al, Br Med Bulletin, 2013

OSTEOARTROSI: QUALE DIAGNOSI?

- ✓ **RIFERITA (self-reported)**
- ✓ **RADIOLOGICA (es. Kellgren - Lawrence)**
- ✓ **SINTOMATICA (dolore e rigidità)**
- ✓ **CLINICA**
  - ➢ **American College of Rheumatology (ACR)**
    (Altman, Seminars in Arthritis & Rheum 1991,20,40)
  - ➢ **European League Against Rheumatism (EULAR)**
    (Zhang et al, Ann Rheum Dis 2009,68,8 e 2010,69,483)

- ***Non tutti i soggetti con OA radiologica presentano sintomi di OA e viceversa***
- ***Le prevalenze variano con le definizioni di OA, metodi di lettura Rx, sedi studiate, popolazioni studiate, diverse distribuzioni dei fattori di rischio, ….***
- ***Il problema della misurazione del dolore***

Country	Total costs	Direct medical costs	Indirect costs
Belgium[13]	€1330	€534	€796
Italy[14]	€2170	€588	€1237
Netherlands[15]	€10 452	€1788	€8664
Spain[16]	€1502	€724	€205
Germany[18]	NR	€1511	NR

Table. *Annual total costs, direct medical costs, and indirect costs of osteoarthritis per patient in Europe. NR, not reported.*

Hiligsmann et al, Medicographia 2013

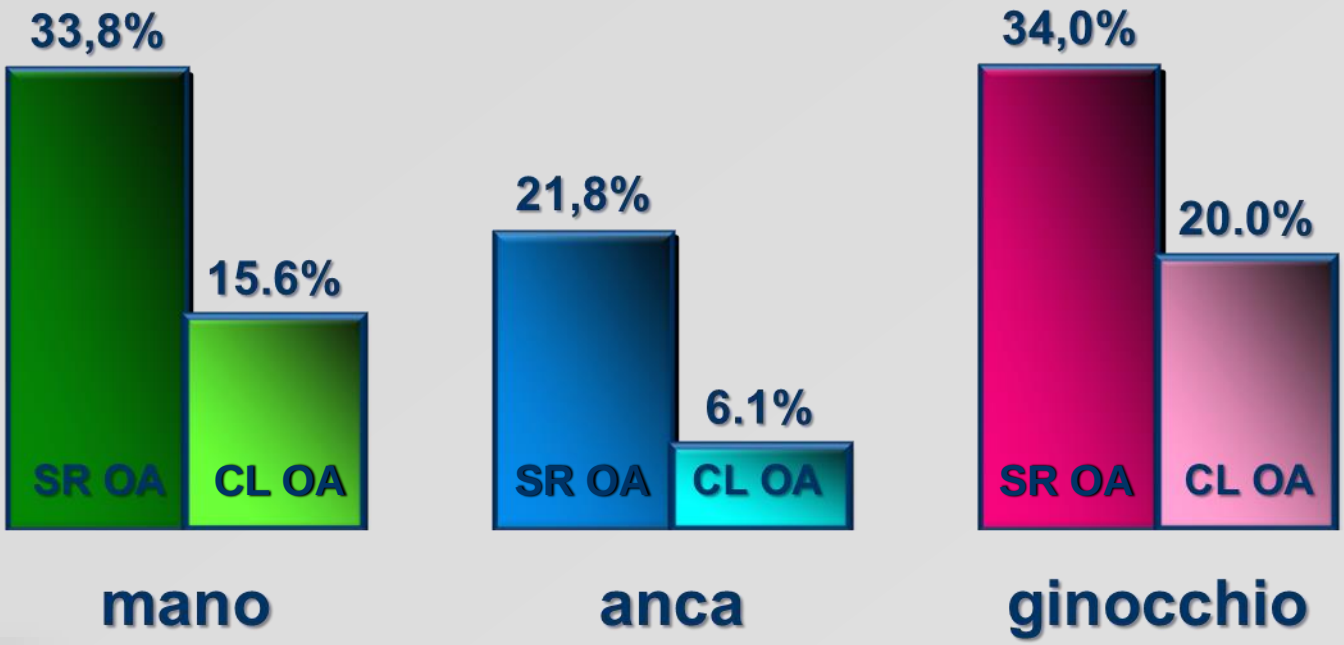
STUDIO EPOSA
EUROPEAN PROJECT ON OSTEOARTHRITIS

Il Progetto Europeo sull'Artrosi studia l'impatto personale e sociale e i determinanti dell'osteoartrosi in 2941 soggetti di età 65-85 anni di sei paesi Europei: Germania, Olanda, Italia, Spagna, Svezia e Regno Unito

Zambon et al, Arthritis Care Res, 2015

OSTEOARTROSI

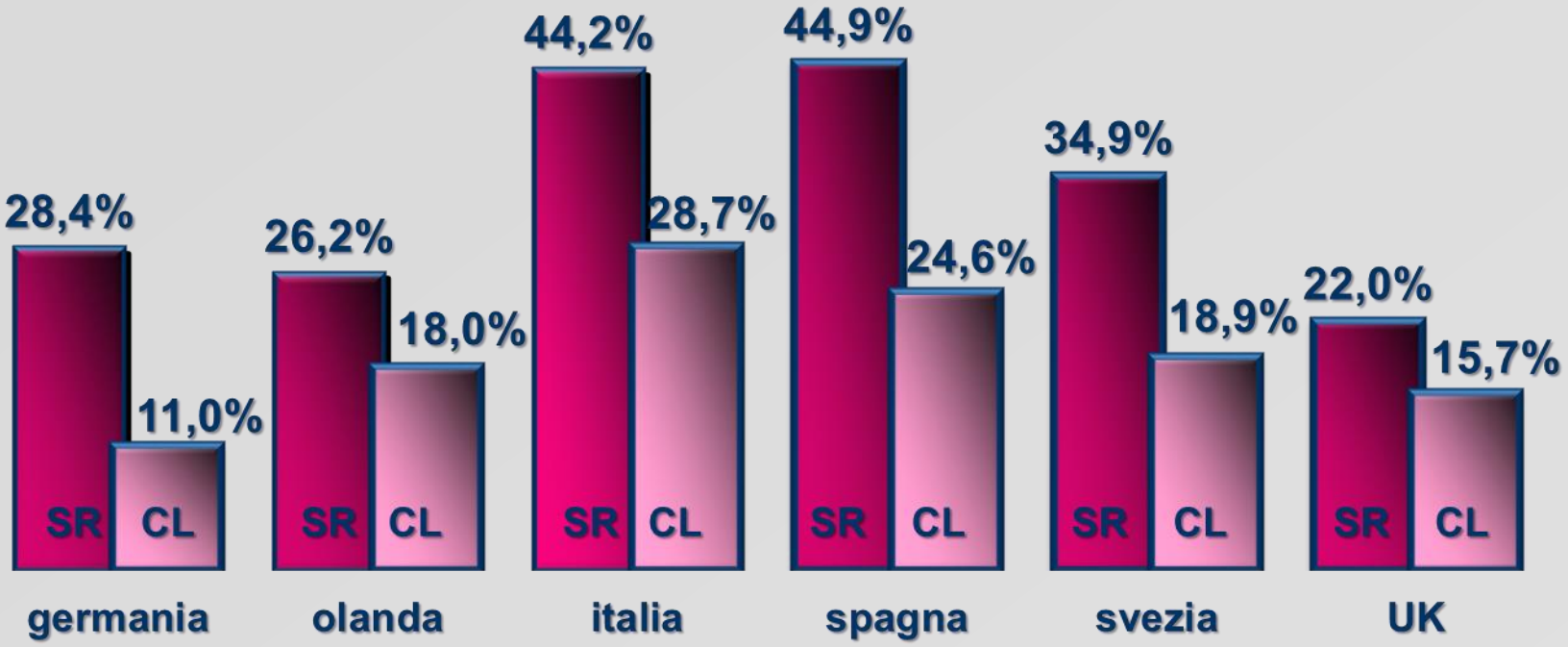
DIAGNOSI: riferita vs clinica



Zambon et al, Arthritis Care Res, 2015

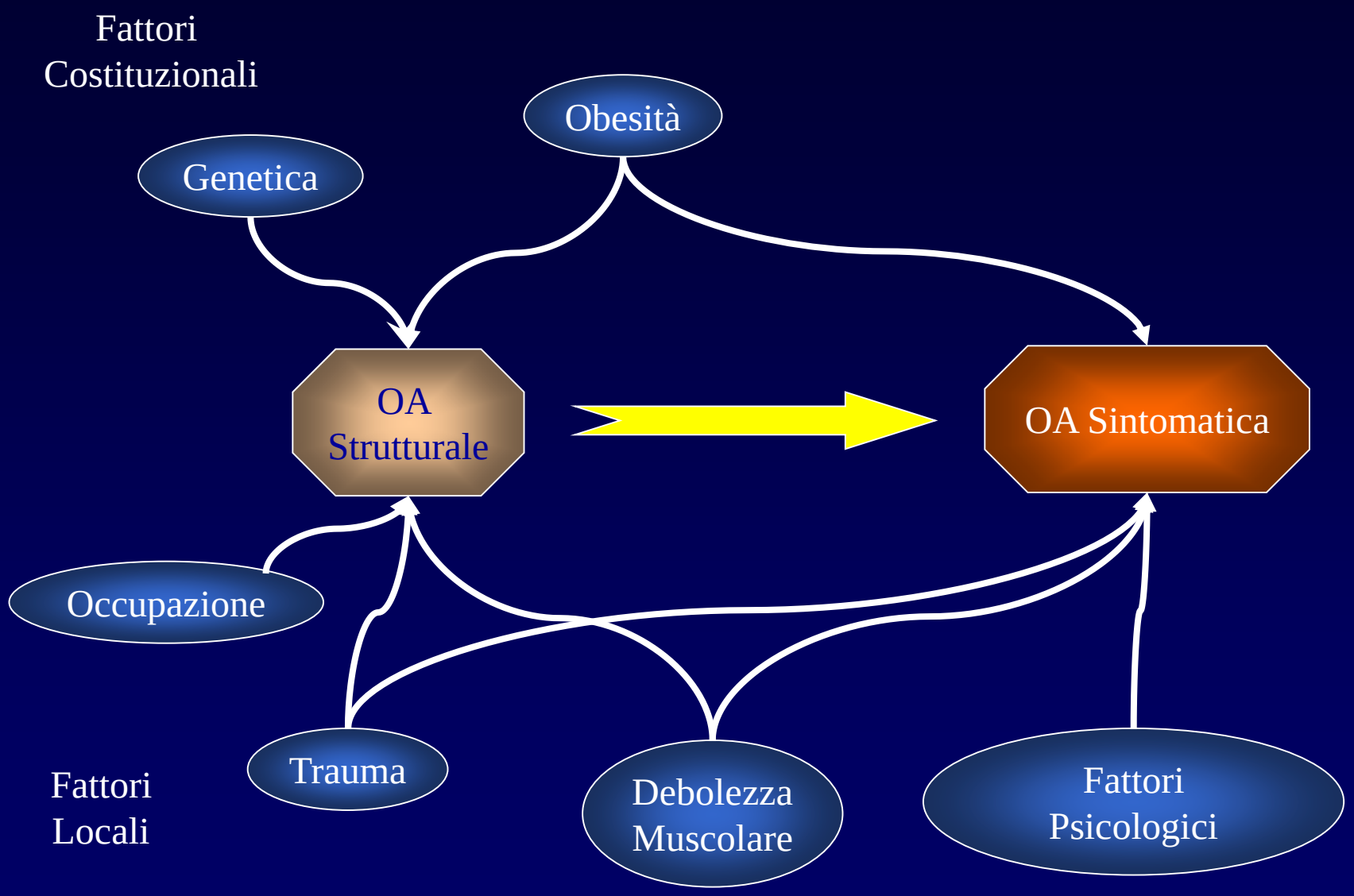
OSTEOARTROSI del GINOCCHIO

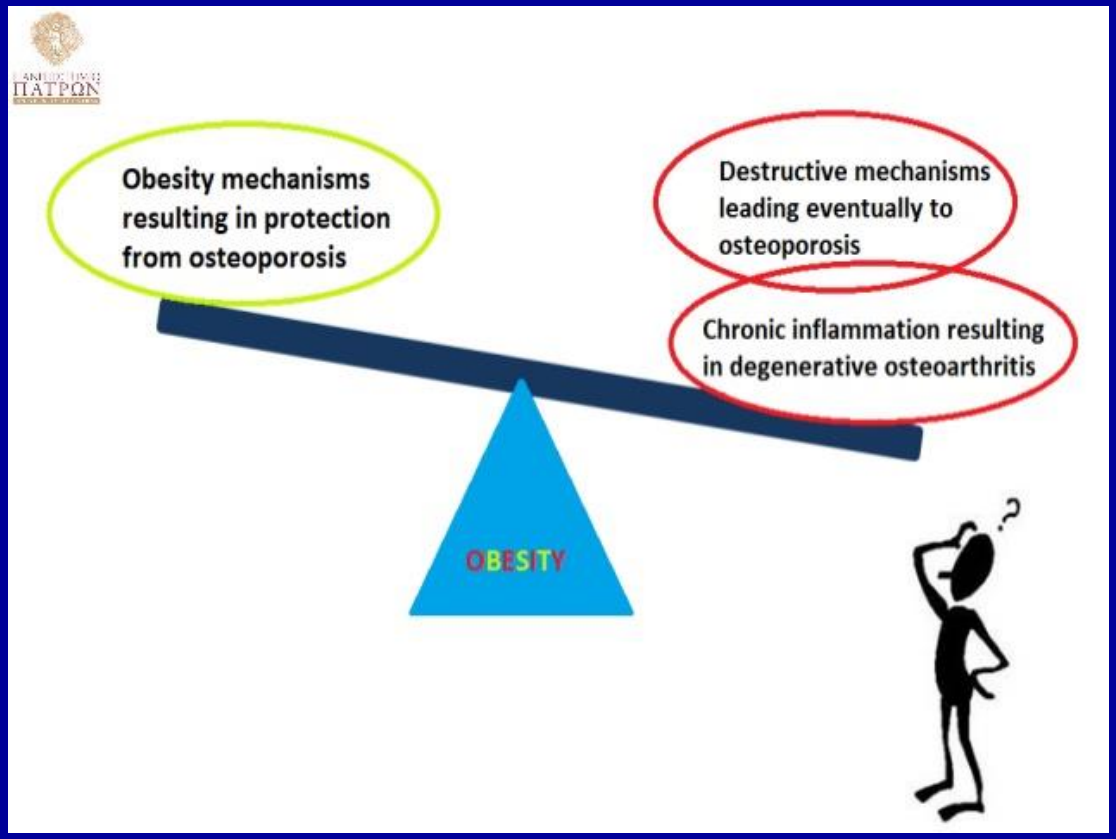
DIAGNOSI: riferita vs clinica



Zambon et al, Arthritis Care Res, 2015

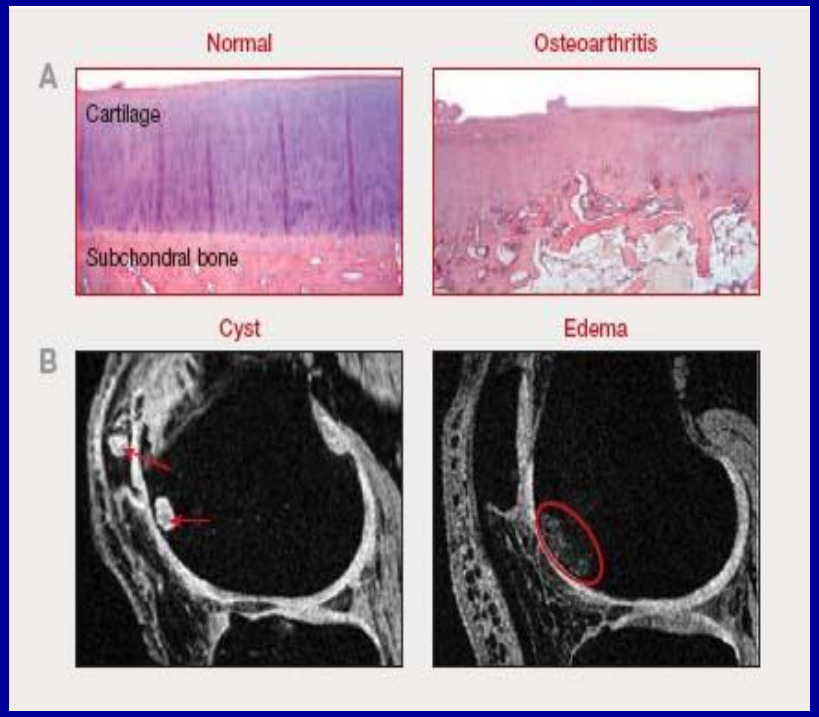
Fattori di rischio dell' OA



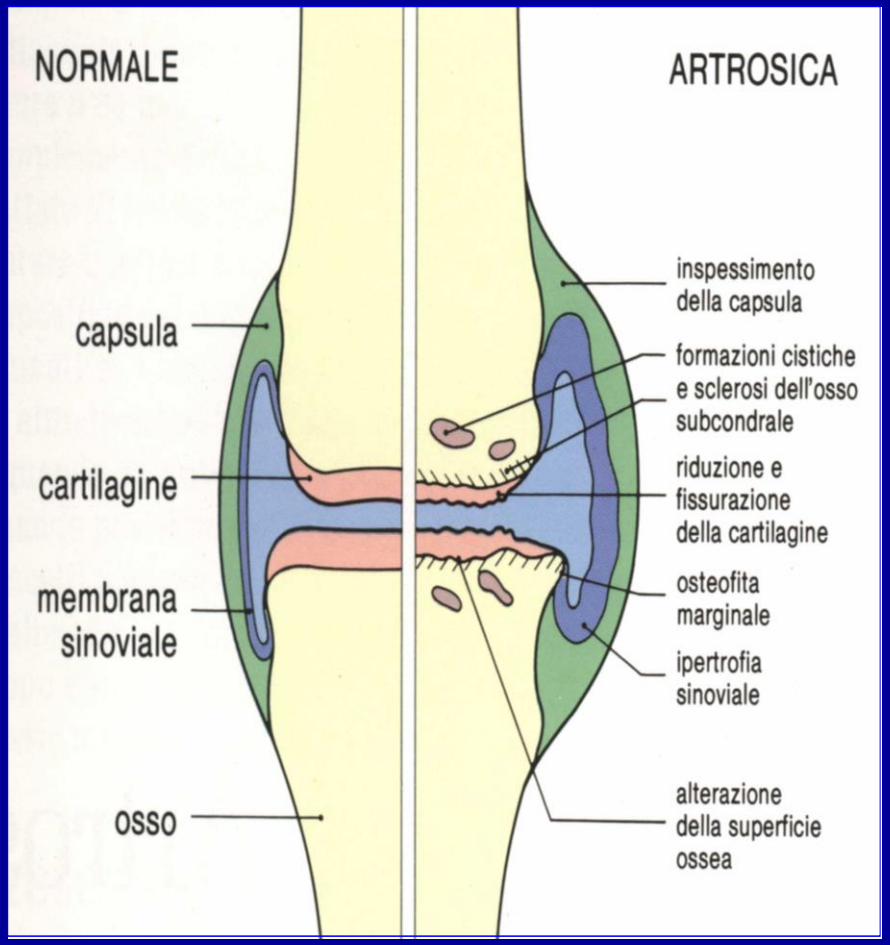


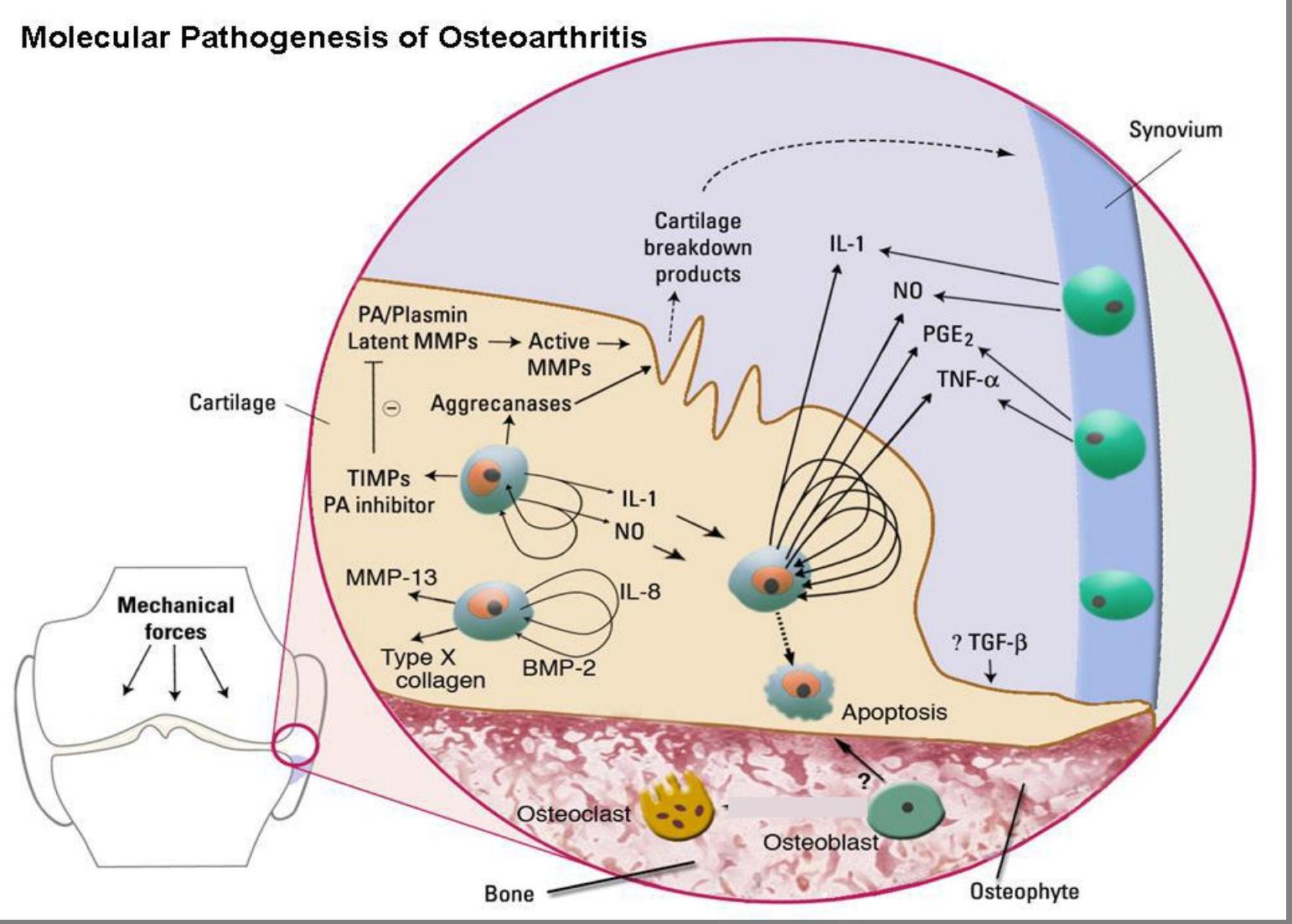
In un capo articolare sottoposto ad un carico eccessivo (obesità) si verificano dei microdanni a carico sia della cartilagine che dell'osso subcondrale. Nel soggetto giovane, vengono quindi attivate delle BMU che riparano il danno nell'osso (*remodelling*) e portano ad un aumento dello spessore della cartilagine (*modeling*), mentre nell'adulto si accumulano i danni, si allarga la diafisi e si formano gli *osteofiti*

Fisiopatologia dell'Artrosi

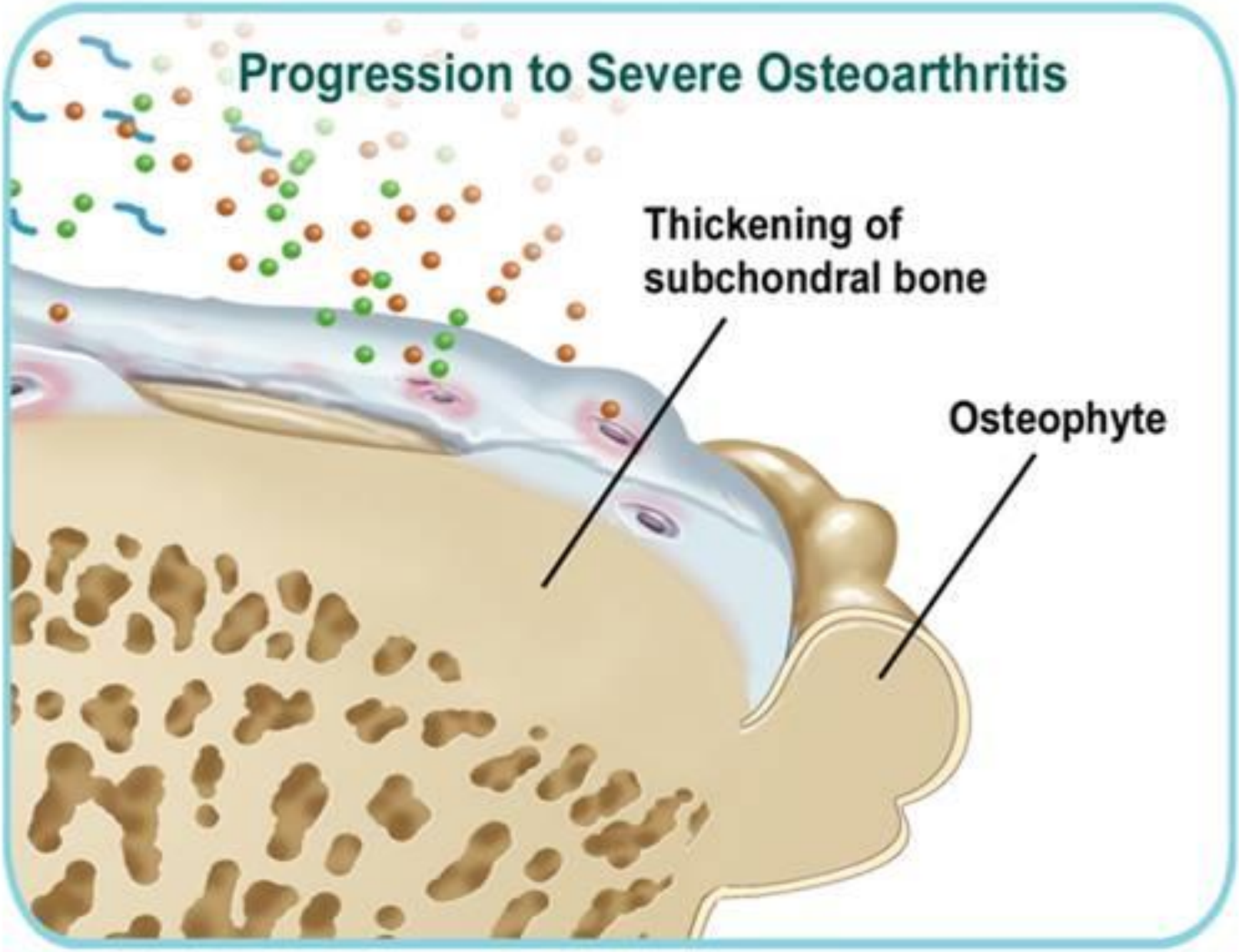


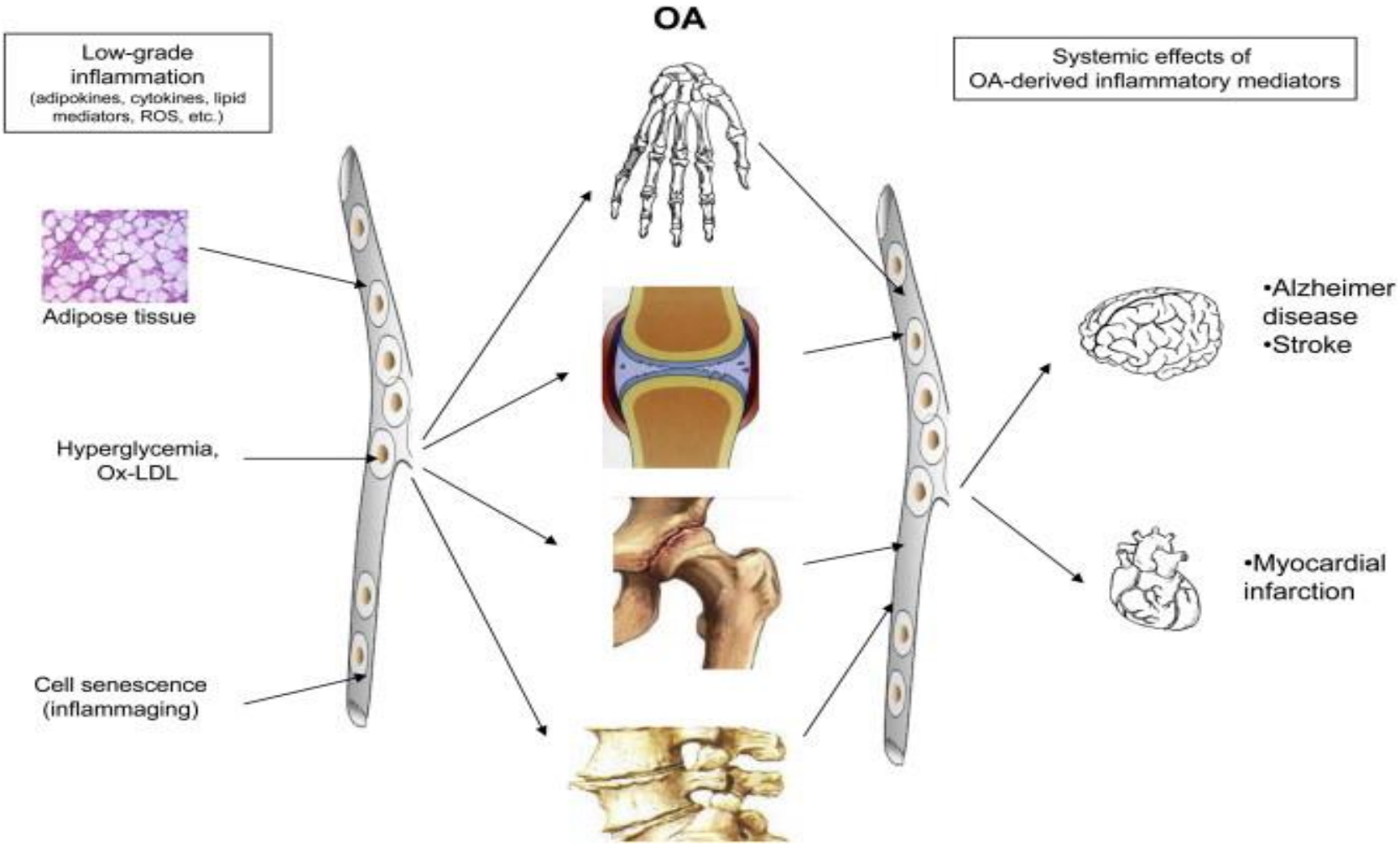
Mineralizzazione degli osteoblasti





Gli enzimi metalloproteasi (MMP) degradano il collagene e i proteoglicani e sono secreti dai condrociti in forma inattiva e stimolati dalle citochine proinfiammatorie, prodotte anche dagli osteoblasti nell'osso subcondrale. La leptina può stimolare questo processo


Progression to Severe Osteoarthritis
Thickening of subchondral bone
Osteophyte



Systemic effects and potential consequences of OA-derived inflammatory mediators. A proposed novel paradigm for the role of low-grade inflammation in OA. Low-grade inflammation is characterized by the release of inflammatory mediators into the blood du...

F. Berenbaum
Osteoarthritis and Cartilage, Volume 21, Issue 1, 2013, 16–21

REJUVENATION RESEARCH
Volume 18, Number 6, 2015
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DOI: 10.1089/rej.2015.1671

Serum 25-Hydroxyvitamin D and Osteoarthritis in Older People: The Progetto Veneto Anziani Study

Nicola Veronese,[1] Stefania Maggi,[2] Marianna Noale,[2] Marina De Rui,[1] Francesco Bolzetta,[1] Sabina Zambon,[2,3] Maria Chiara Corti,[4] Leonardo Sartori,[3] Estella Musacchio,[3] Giovannella Baggio,[5] Egle Perissinotto,[6] Gaetano Crepaldi,[2] Enzo Manzato,[1,2] and Giuseppe Sergi[1]

Our population-based cross-sectional study found a significant association between low circulating 25OHD levels and the presence of OA and OA-related pain in different sites investigated. About one in three of the participants in our study had serum 25OHD levels below 50 nmol/L

Osteoarthritis and Cartilage

OARSI OSTEOARTHRITIS RESEARCH SOCIETY INTERNATIONAL

Review

Recommendations for an update of the 2010 European regulatory guideline on clinical investigation of medicinal products used in the treatment of osteoarthritis and reflections about related clinically relevant outcomes: expert consensus statement

J.-Y. Reginster † *, S. Reiter-Niesert ‡, O. Bruyère †, F. Berenbaum § ||, M.-L. Brandi ¶, J. Branco # ††, J.-P. Devogelaer ‡‡, G. Herrero-Beaumont §§, J. Kanis ||||, S. Maggi ¶¶, E. Maheu ##, P. Richette ††† ‡‡‡, R. Rizzoli §§§, C. Cooper ||||| ¶¶¶

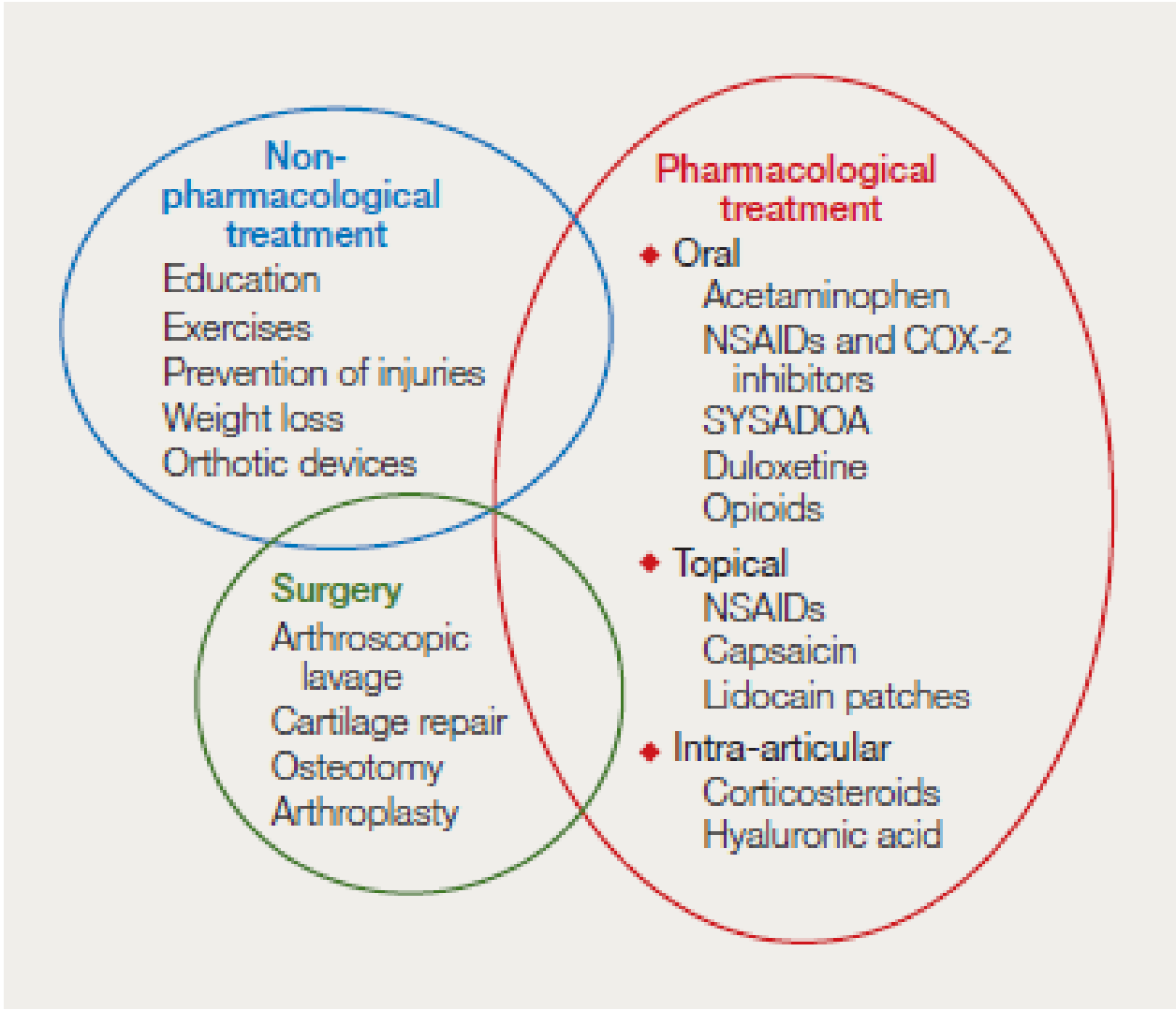


Figure 1. Multimodal management of osteoarthritis.
Abbreviations: COX, cyclooxygenase; NSAID, nonsteroidal anti-inflammatory drug; SYSADOA, symptomatic slow-acting drugs for osteoarthritis.

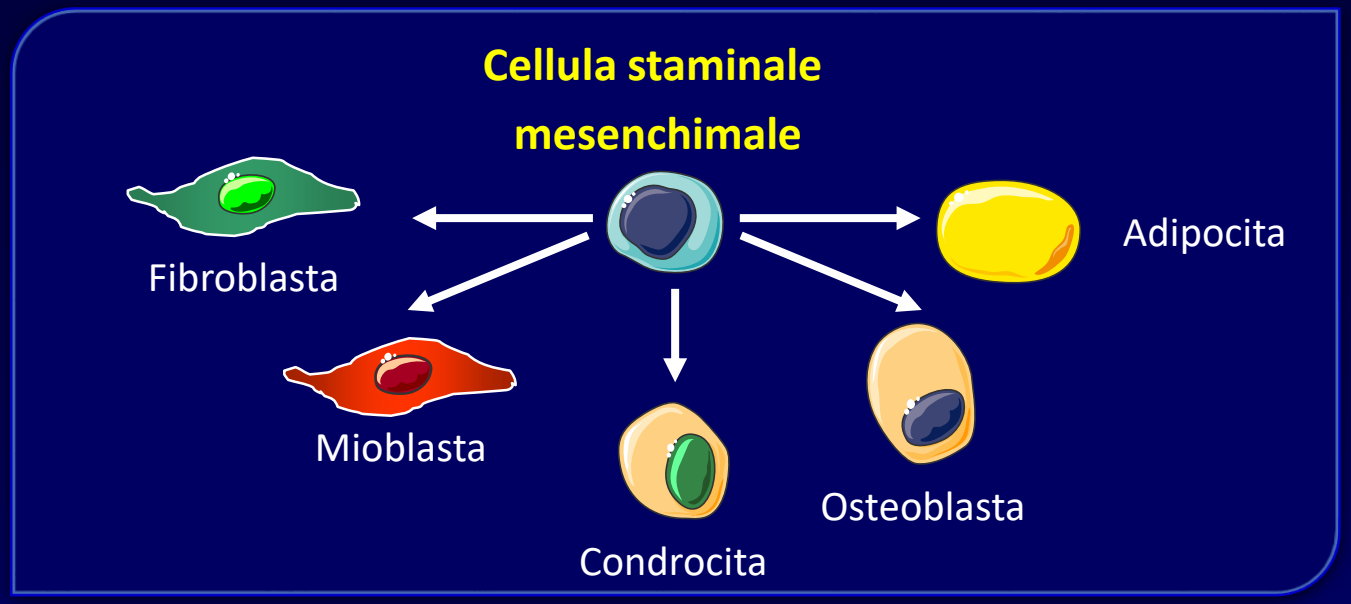
Treatment type			Adverse effect/safety profile
Symptomatic drugs	Oral	Acetaminophen	GI discomfort, bleeding; renal failure; hypertension; hepatotoxicity
		NSAIDs; coxibs	GI ulcer/bleeding; cardiovascular events; renal events
		Opioids	Constipation; vomiting; somnolence; increased risk of fracture, morbidity, and mortality in elderly
		Duloxetine	Constipation; nausea; hyperhidrosis
	Topical	Topical NSAIDs	Skin reactions; GI events
		Capsaicin	Skin burning sensation; long-term skin desensitization?
		Lidocaine patches	
	Injectable	Intra-articular corticosteroids	Local infection, systemic effects
		Intra-articular hyaluronic acid or viscosupplementation	Local reactions at the site of injection, swelling, flares of pain
Slow-acting symptomatic drugs	Oral	Glucosamine and chondroitin sulfate	
		Diacerein	Lower GI effects
		Avocado soybean unsaponifiables	

Table I. *Adverse effects of different pharmacological options for the treatment of osteoarthritis.*
Abbreviations: GI, gastrointestinal; NSAID, nonsteroidal anti-inflammatory drug.

FARMACI PER L'OSTEOPOROSI

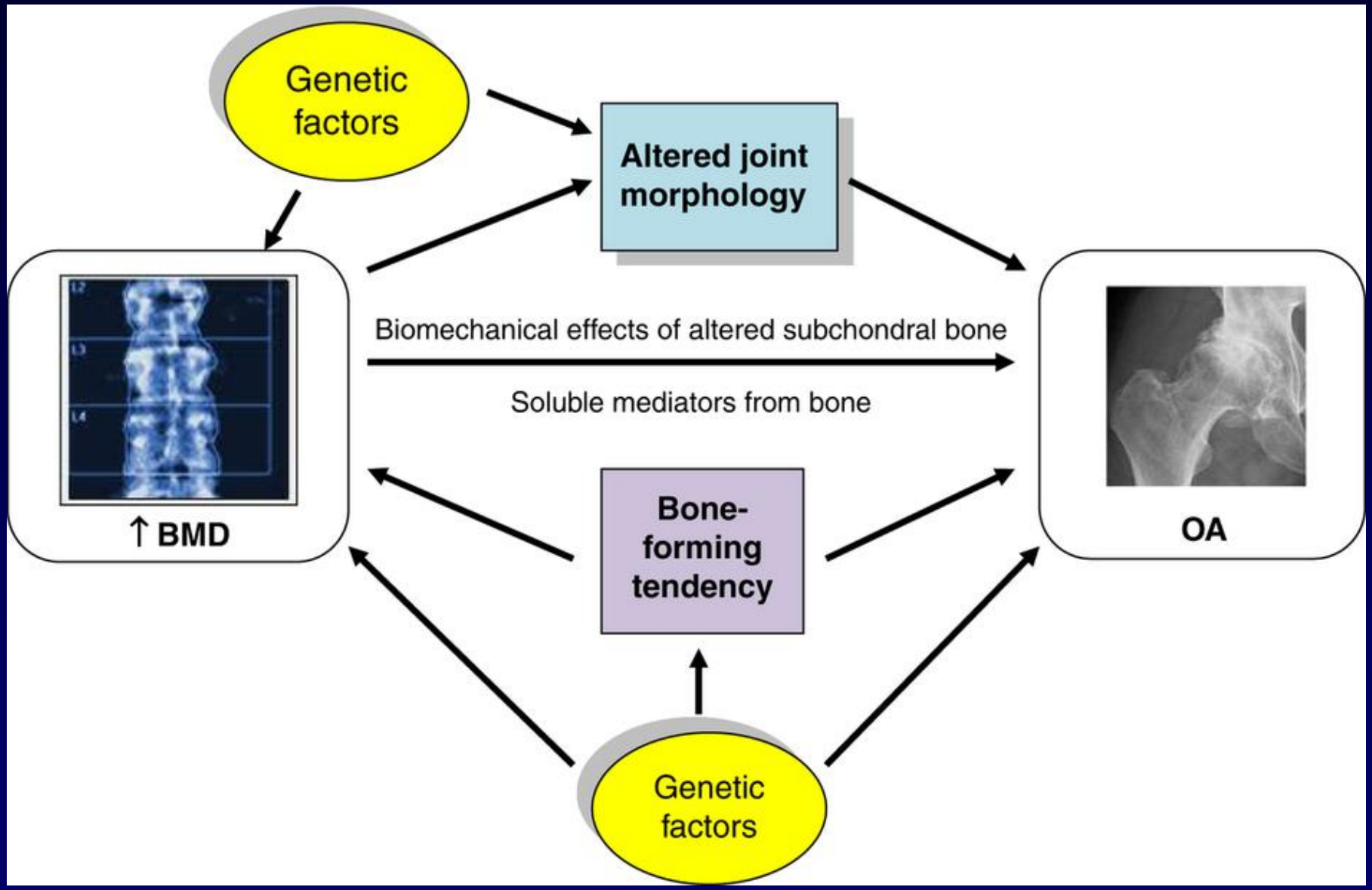
ANTIRIASSORBITIVI	OSTEOFORMATORI
NON ORMONALI **Bisfosfonati** • Alendronato • Ibandronato • Risedronato • Zoledronato	**NON ORMONALI** **Stronzio ranelato**
ORMONALI **SERM** • Raloxifene • Bazedoxifene	**ORMONALI** **Teriparatide**
ANTICORPI MONOCLONALI **Denosumab**	

Osteoblasti e condrociti hanno la stessa origine embriologica dal tessuto mesenchimale



L'ipotesi è che un farmaco efficace sugli osteoblasti può esserlo anche sui condrociti

Some potential mechanisms underlying the association between BMD and OA



Hardcastle et al, BoneKey report, 2015

Conclusioni

- Le nuove evidenze sperimentali dimostrano un complesso processo fisiopatologico alla base dell'OA
- Ruolo preponderante dell'osso subcondrale e dell'interazione tra cartilagine ed osso
- Farmaci attivi sul turnover osseo possono contribuire a rallentare i processi degenerativi osteoarticolari