



**La prevenzione e Gestione del rischio da
Sovraccarico Biomeccanico:
la parola alle imprese e non solo**

**DISTURBI E PATOLOGIE
MUSCOLOSCELETRICHE IN
EDILIZIA:
QUANTO ANCORA SI PUÒ
ASPETTARE AD INTERVENIRE?**

Nora Vitelli – Natale Battevi

Milano – 15 giugno 2012

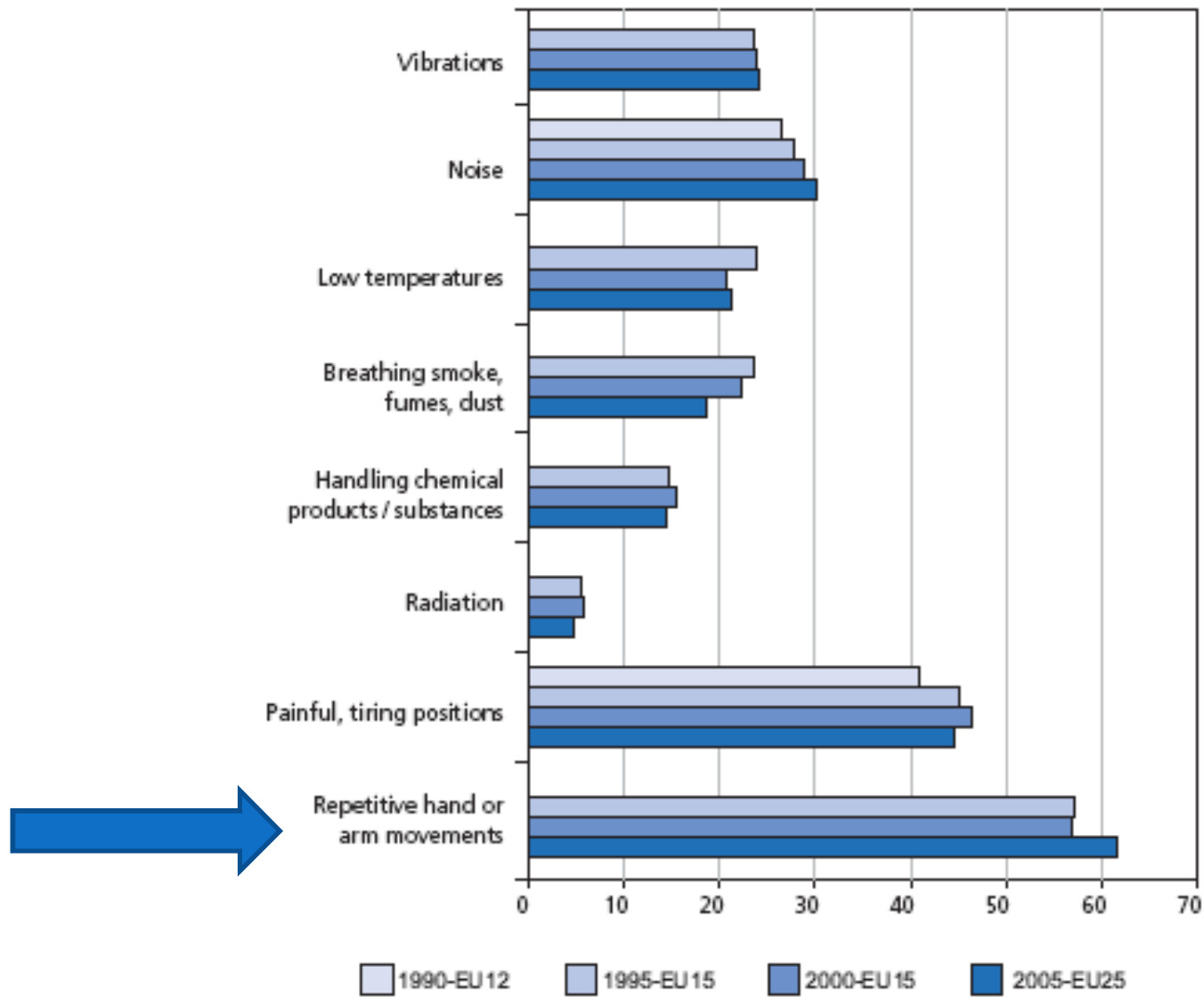


INTRODUZIONE



SOVRACCARICO BIOMECCANICO ARTI SUPERIORI

Figure 3.1: Exposure to physical risks,* 1990–2005 (%)

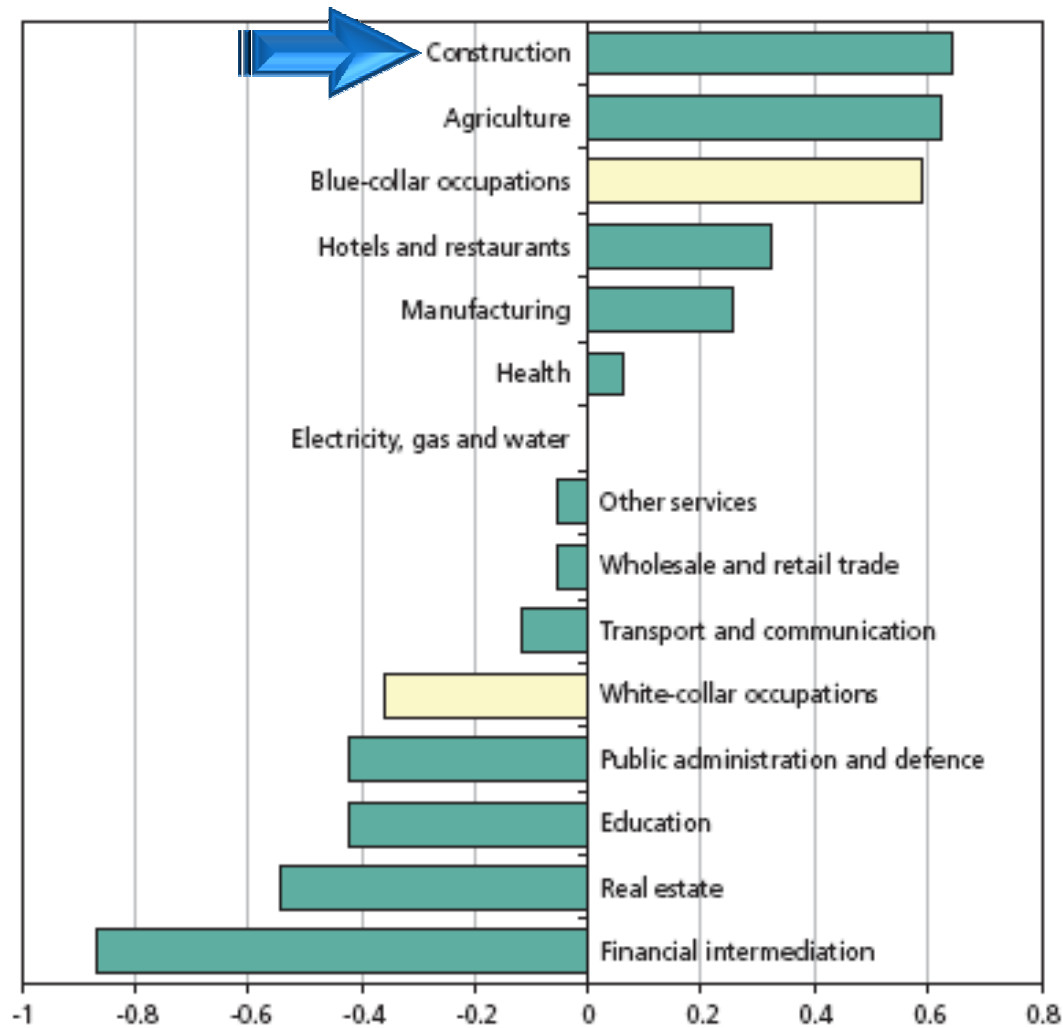


**EUROFOUND -
Fourth European
Working
Conditions
Survey - 2005**

* % exposed a quarter or more of the time

SOVRACCARICO BIOMECCANICO

Figure 3.6: Type of exposure to ergonomic risk factors, by sector and occupation (average standardised (z) score)

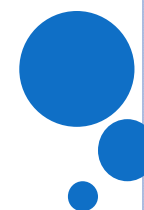
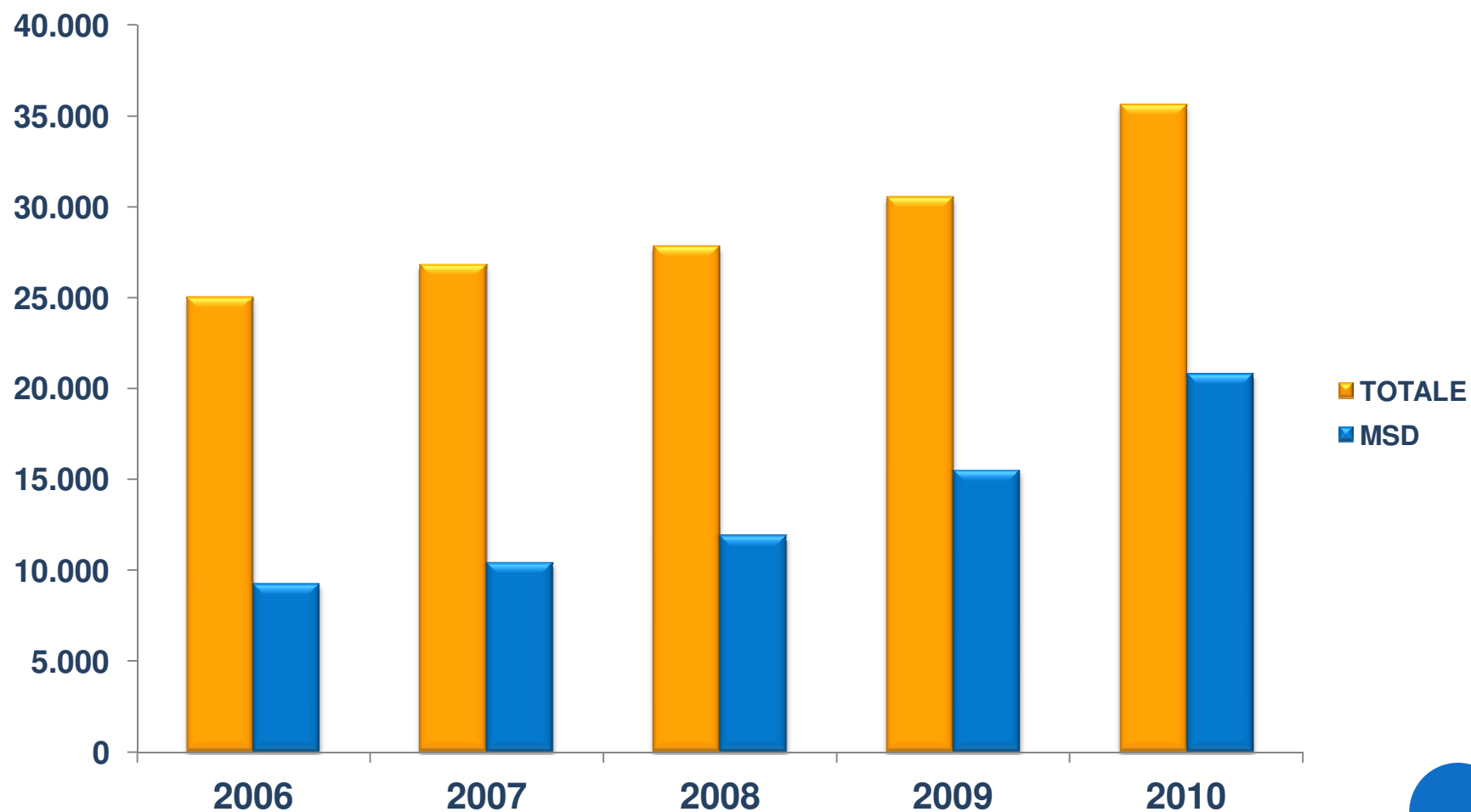




MALATTIE PROFESSIONALI IN EUROPA (EU12)

Anno	Totale M.P. Riconosciute	Totale MSD		Costruzioni M.P. Riconosciute		Costruzioni Totale MSD	
		N°	%	N°	%	N°	%
2001	31945	13502	42,8	3937	12,3	1560	39,6
2002	50049	23807	47,6	7145	14,5	2873	40,2
2003	54250	25717	47,4	7884	14,5	3128	39,7

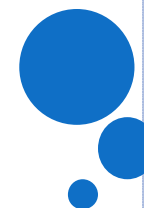
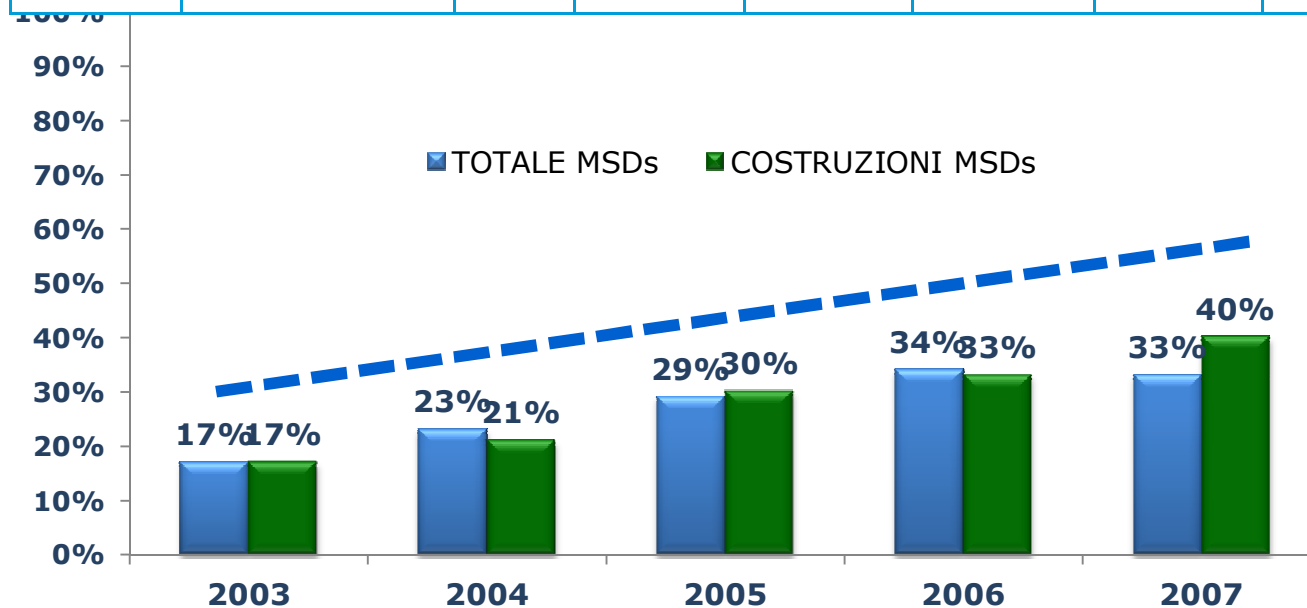
MALATTIE PROFESSIONALI IN ITALIA



MALATTIE PROFESSIONALI IN ITALIA



Anno	Totale M.P. Denunciate	Totale MSD		Costruzioni M.P. Denunciate		Costruzioni Totale MSD	
		N°	%	N°	%	N°	%
2003	23911	4198	17,6%	3022	12,6%	523	17,3%
2004	25123	5934	23,6%	2997	11,9%	653	21,8%
2005	24995	7381	29,5%	2958	11,8%	904	30,6%
2006	24881	8520	34,2%	2098	8,4%	701	33,4%
2007	26473	8805	33,3%	2247	8,5%	892	39,7%



BACKGROUND

Arndt V, Rothenbacher D, Daniel U, Zschenderlein B, Schuberth S, Brenner H: Construction work and risk of occupational disability: a ten year follow up of 14474 male workers.

Occupational Environmental Medicine 1996;53:686-691.

Stocks SJ, McNamee R, Carder M, Agius RM: The incidence of medically reported work-related ill health in the UK construction industry.

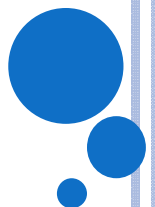
Occup Environ Med 2010 67: 574-576

Dong XS, Wang X, Daw C, Ringen K: Chronic Diseases and Functional Limitations Among Older Construction Workers in the United States: A 10-Year Follow-up

Study. JOEM 2011 53 (4): 372-380

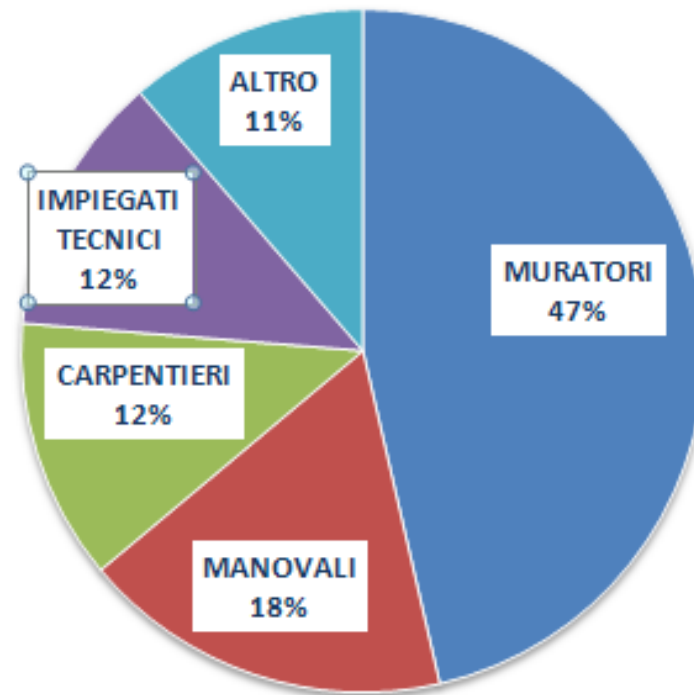
Stocks SJ, Turner S, McNamee R, Carder M, Hussey L, Agius RM: Occupation and work-related ill-health in UK construction workers.

Occupational Medicine 2011;61:407-415



BACKGROUND

Mosconi G, Borleri D, Mandelli G, Prandi E, Belotti L: **Le malattie da lavoro in edilizia**. La Medicina del Lavoro. 2003 94(3):296-311



- **sorveglianza sanitaria periodo:1996-2000**
- **≈1350 lavoratori**
- **54% delle limitazioni dovute a patologie muscoloscheletriche**



IL PROGETTO



OBIETTIVI

Analizzare i fattori di rischio da sovraccarico biomeccanico nel settore delle costruzioni (settore ad alta variabilità)

Mettere a punto un database del rischio da sovraccarico biomeccanico di attività/compiti/mansioni comuni nel settore delle costruzioni.

Trovare soluzioni ergonomiche efficaci (→ banca delle soluzioni)

Valutare lo stato di salute dei lavoratori del settore delle costruzioni (artigiani)

Valutare la frequenza di MSDs in questa popolazione e il loro impatto sul lavoro

STRUTTURA

REALIZE RISK PROFILES TO ESTIMATE
AND MANAGE THE RISK OF
BIOMECHANICAL OVERLOAD IN
CONSTRUCTION TRADES



RISCHIO



CARATTERIZZAZIONE
DELL'ESPOSIZIONE



PROFILI DI RISCHIO



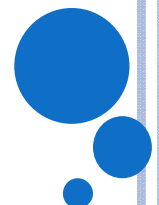
DANNO



PROTOCOLLO
DIAGNOSTICO



IDENTIFICAZIONE MSDs



PARTNERS

2008-2010



 **Fondazione
Don Carlo Gnocchi
Onlus**



**UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH**



PRIMA PARTE DEL PROGETTO



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

UPPER LIMB RISK ASSESSMENT IN PAINTERS

- Perform a detailed job description to focus on tasks that need evaluation.
- Observe all selected tasks and realize a video archive
- Evaluate all tasks with OCRA method for upper limb biomechanical overload.



SECONDA PARTE DEL PROGETTO



UL-BIOMECHANICAL OVERLOAD IN CONSTRUCTION TRADES AND LOW BACK PAIN/INJURIES

- Detailed job description to identify critical tasks in different jobs
- Evaluation of (lumbar) biomechanical overload with NIOSH Lifting Equation for Variable Tasks.





SCREENING MUSCULOSKELETAL DISORDERS

- 1. Training course for occupational physicians and other sanitary personnel involved in data collection**
- 2. Questionnaire administration before periodical examination for health surveillance (fkt).**
- 3. Questionnaire check during medical anamnesis**
- 4. Assistance of a occupational health physician**
- 5. Clinical and functional evaluation of positive subjects**
- 6. Other diagnostic procedures if necessary**

PERFORMING THE SAME SCREENING ON ~ 2500 PC-WORKERS



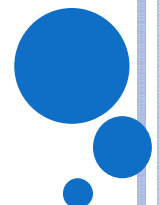
THE SAMPLE

**DATA COLLECTION:
November 2009 – November 2010**

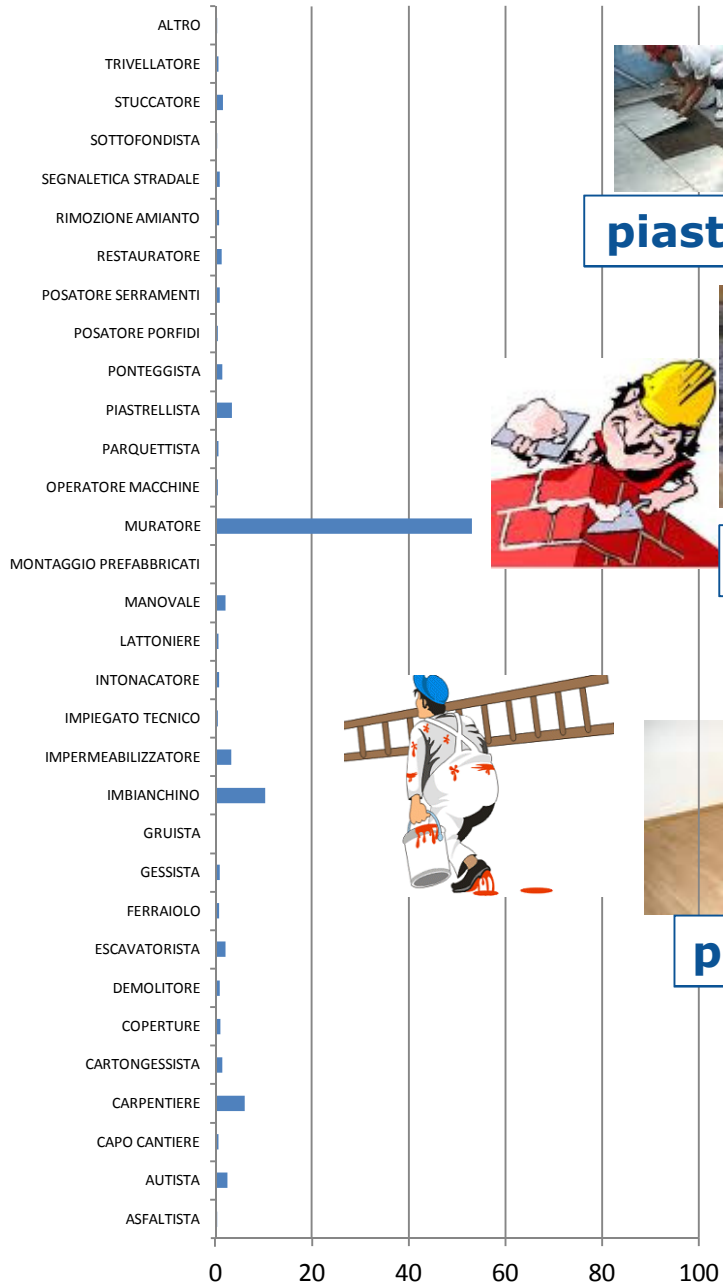
GENERAL DATA



VARIABLE	N (%)
Subject	2755 (100%)
Median age (years)	39
Age \leq 25 anni (n)	356 (13%)
>25 years Age \leq 35 years (n)	815 (30%)
>35 years Age \leq 45 years (n)	837 (30%)
>45 years Age \leq 55 years (n)	534 (19%)
Age \geq 55 years (n)	213 (8%)
Mean lenght of service (years)	15
Lenght of service \leq 10 years (n)	1237 (45%)
Lenght of service 11-20 years (n)	623 (23%)
Lenght of service 21-30 years (n)	484 (18%)
Lenght of service > 30 years (n)	411 (15%)



EPM-CPTA GROUP



piastrelle



asfaltisti



manovali



tetti



porfido



serramenti



guaine



parquet



carpentieri



Capo Cantiere



sti



demolitori



cartongessisti



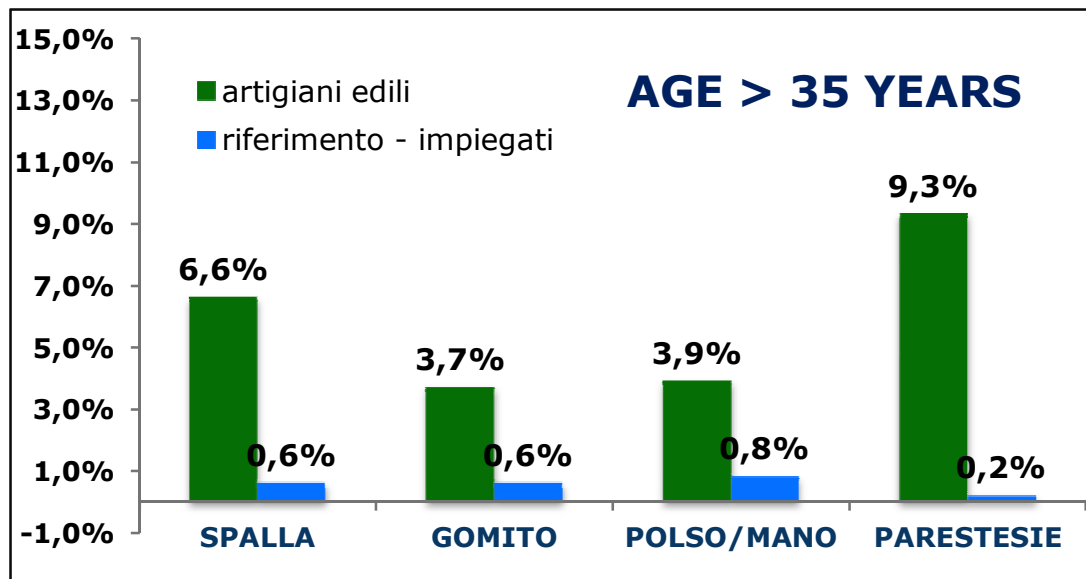
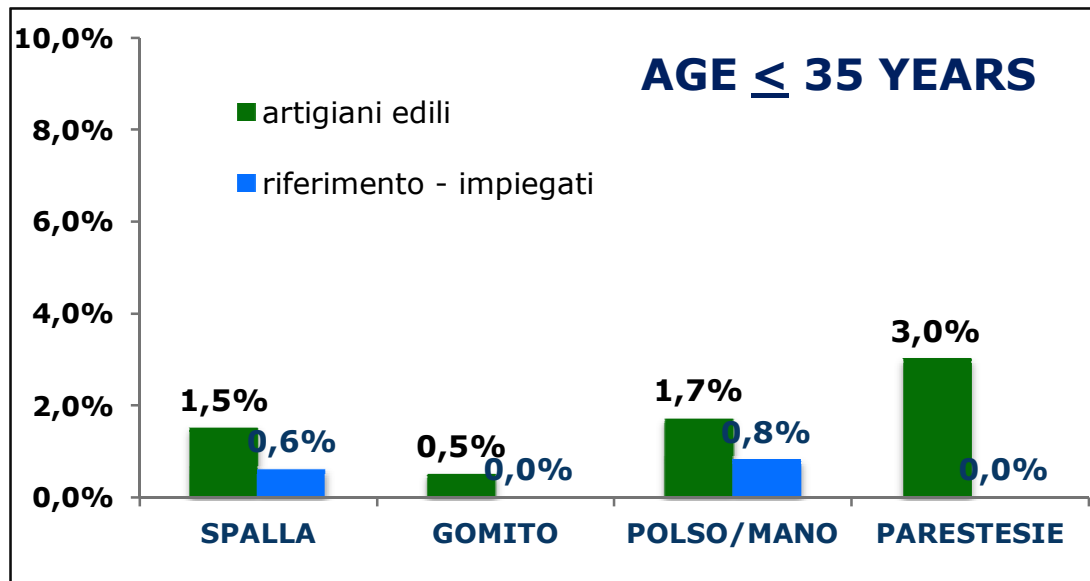
lattoniere



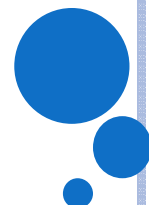
RISULTATI

GRUPPO GENERALE

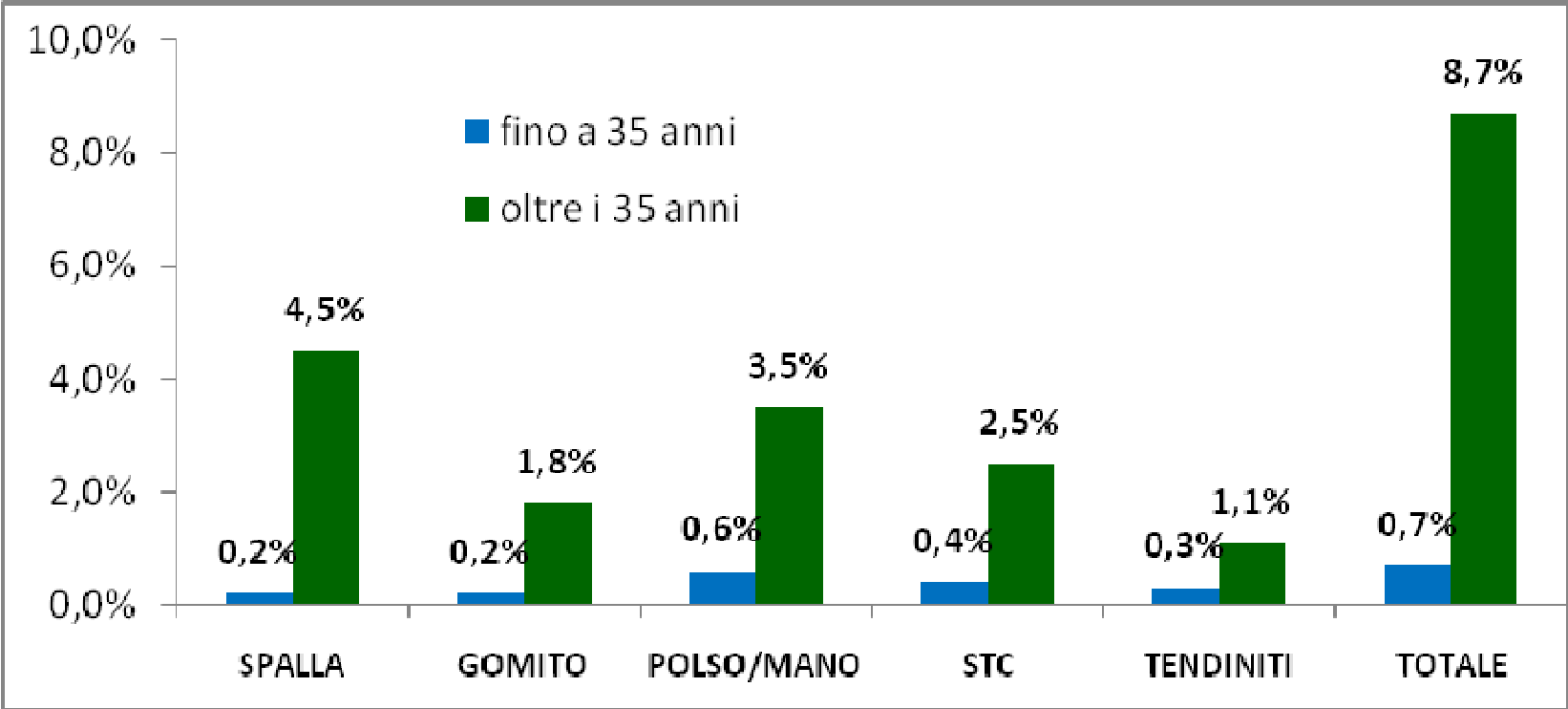
GRUPPO GENERALE – SCREENING DISTURBI: SOGGETTI POSITIVI



P < 0.01



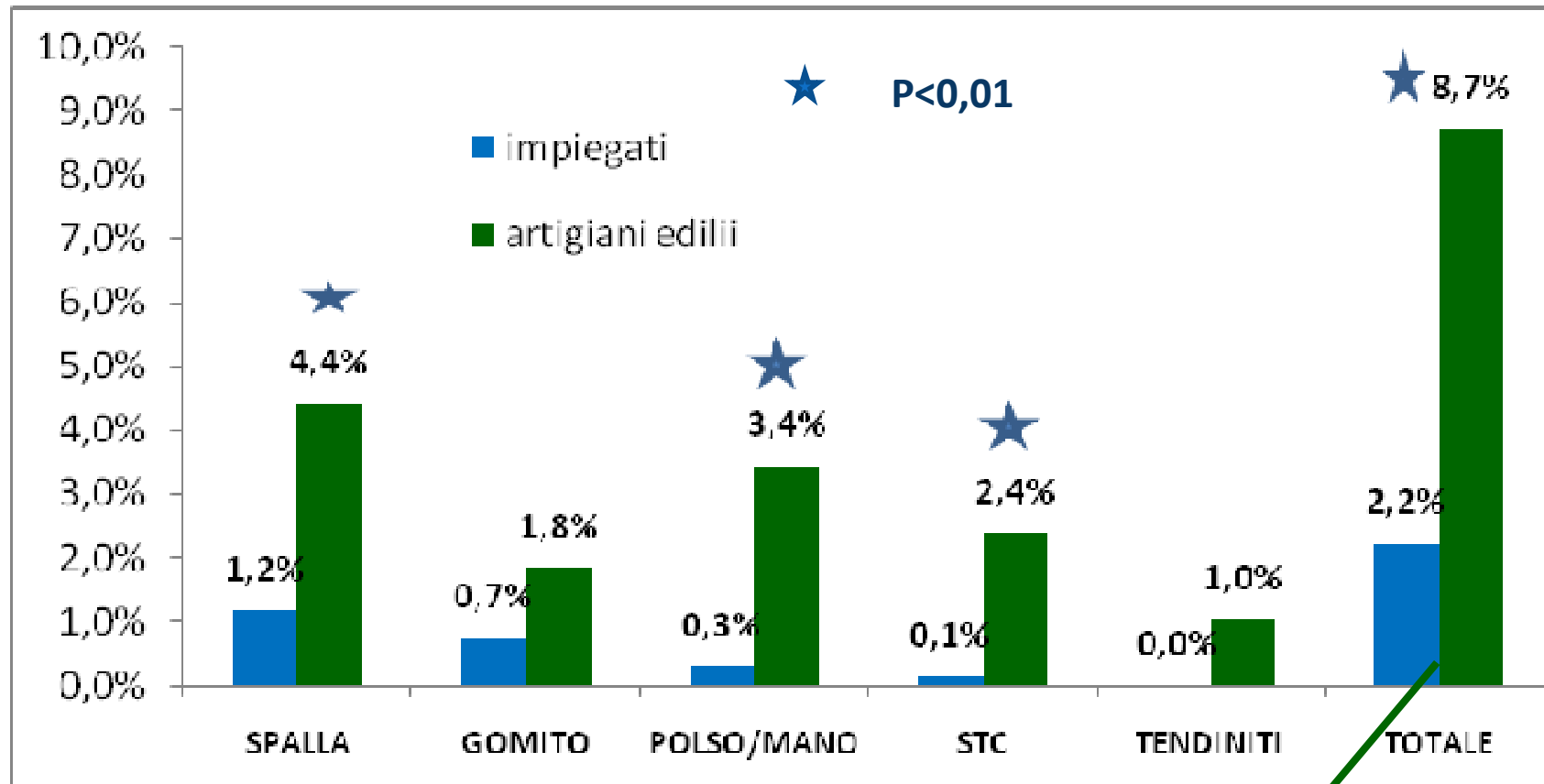
GRUPPO GENERALE – PATOLOGIE DELL'ARTO SUPERIORE



GENERAL POPULATION (MALE) = 3,5%



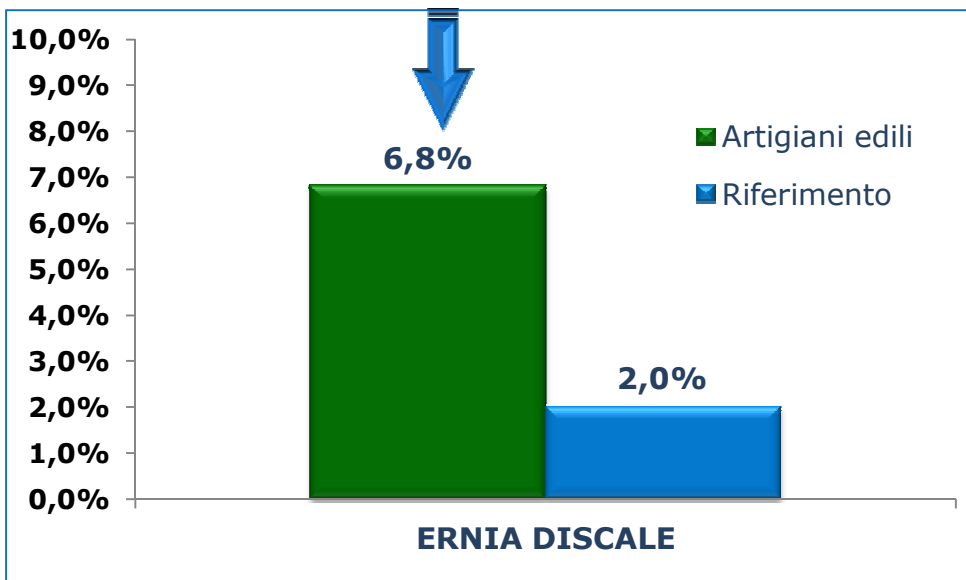
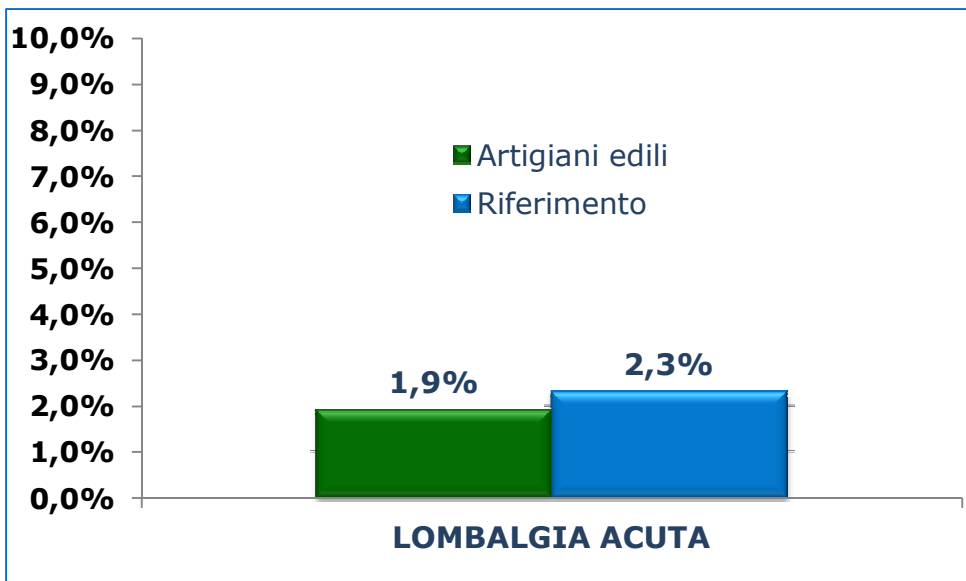
ETA' > 35anni - PATOLOGIE DELL'ARTO SUPERIORE



21% : 2 (OR MORE) PATHOLOGIES



GRUPPO GENERALE – LOMBALGIA ACUTA E ERNIA DEL DISCO



SUBJECT WITH LUMBAR HERNIA				
AGE CLASS - YEARS				
≤ 25	25-35	35-45	45-55	>55
0,0%	2,8%	7,6%	14,0%	18,1%



RISULTATI

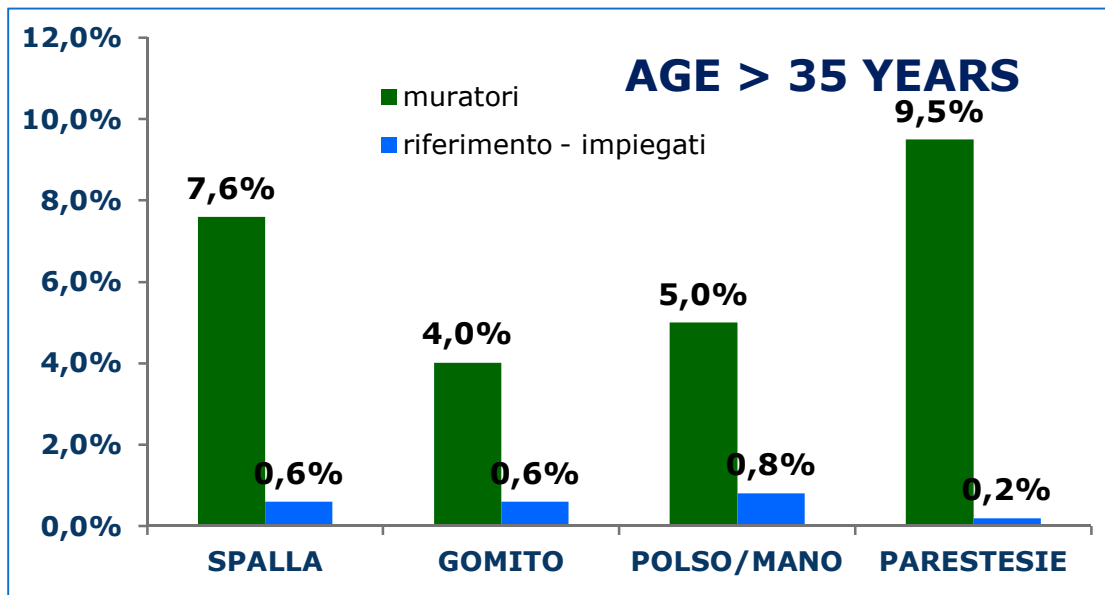
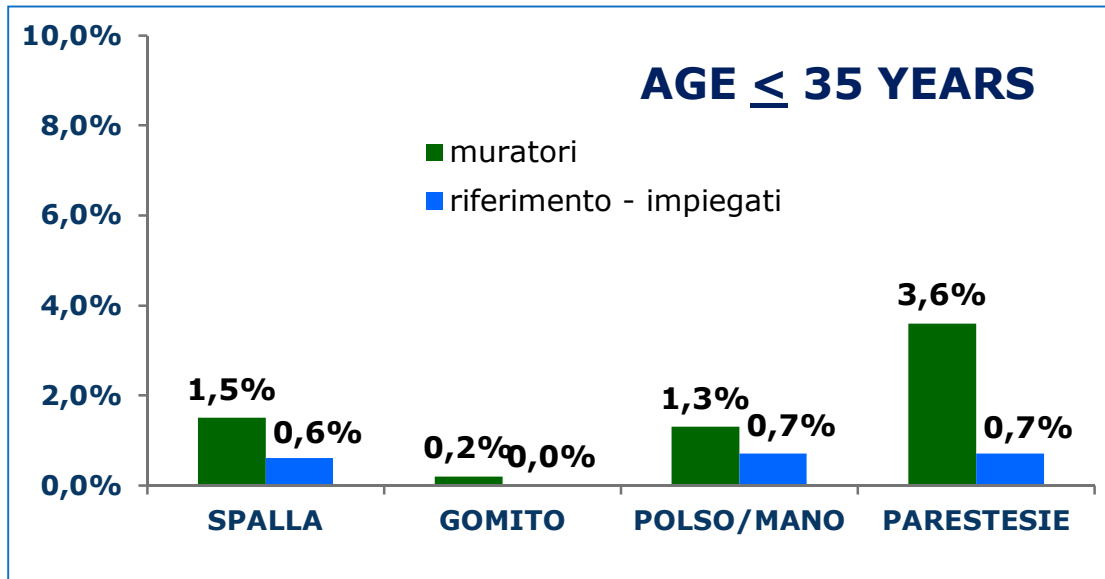
MURATORI

MURATORI – DATI GENERALI

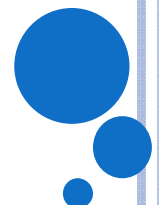
VARIABLE	N (%)
Subjects	1431 (100%)
Median age (years)	40
Age \leq 25 anni (n)	190 13%
>25 years Age \leq 35 years (n)	345 24%
>35 years Age \leq 45 years (n)	428 30%
>45 years Age \leq 55 years (n)	326 23%
Age \geq 55 years (n)	54 10%
Mean lenght of service (years)	17
Lenght of service \leq 10 years (n)	512 36%
Lenght of service 11-20 years (n)	332 23%
Lenght of service 21-30 years (n)	293 20%
Lenght of service > 30 years (n)	294 21%



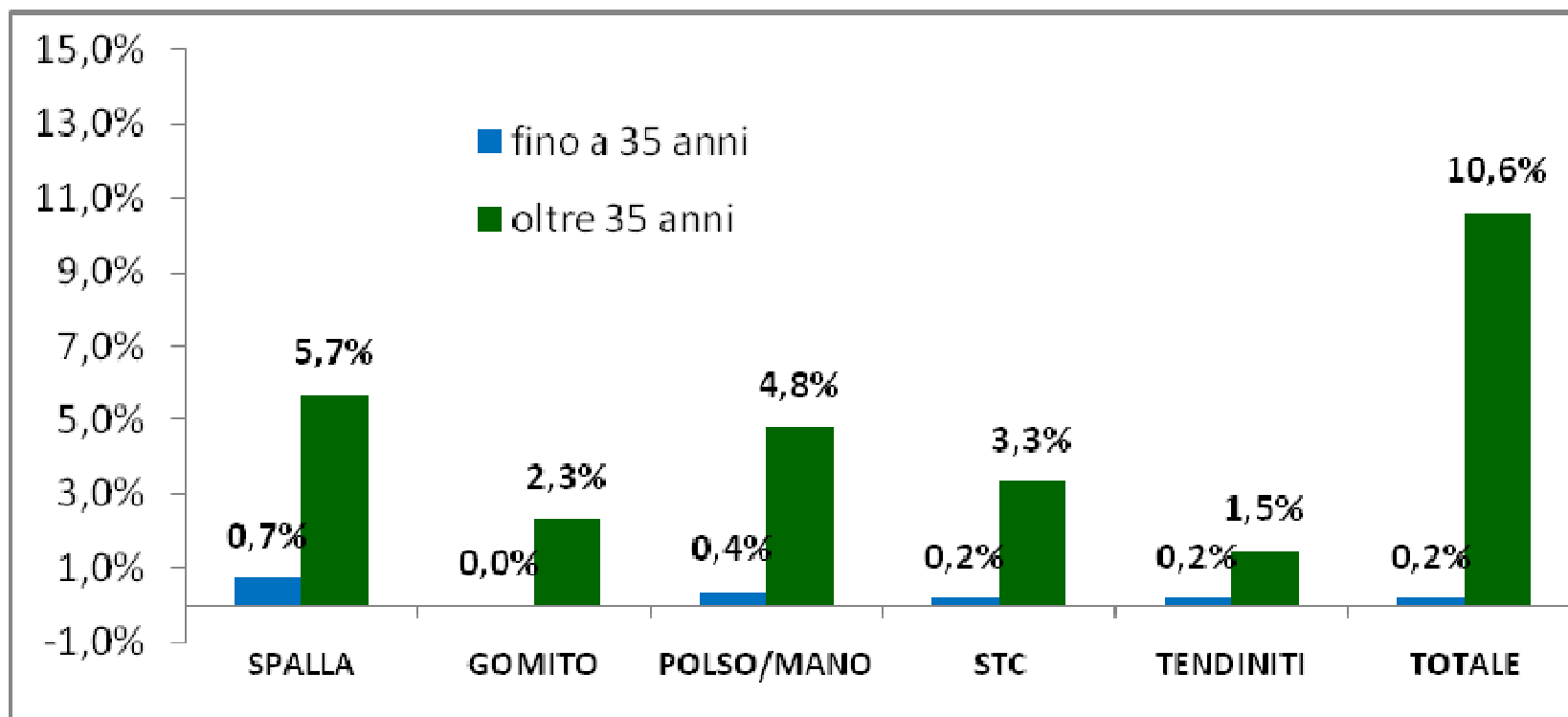
MURATORI – SCREENING DISTURBI: SOGGETTI POSITIVI



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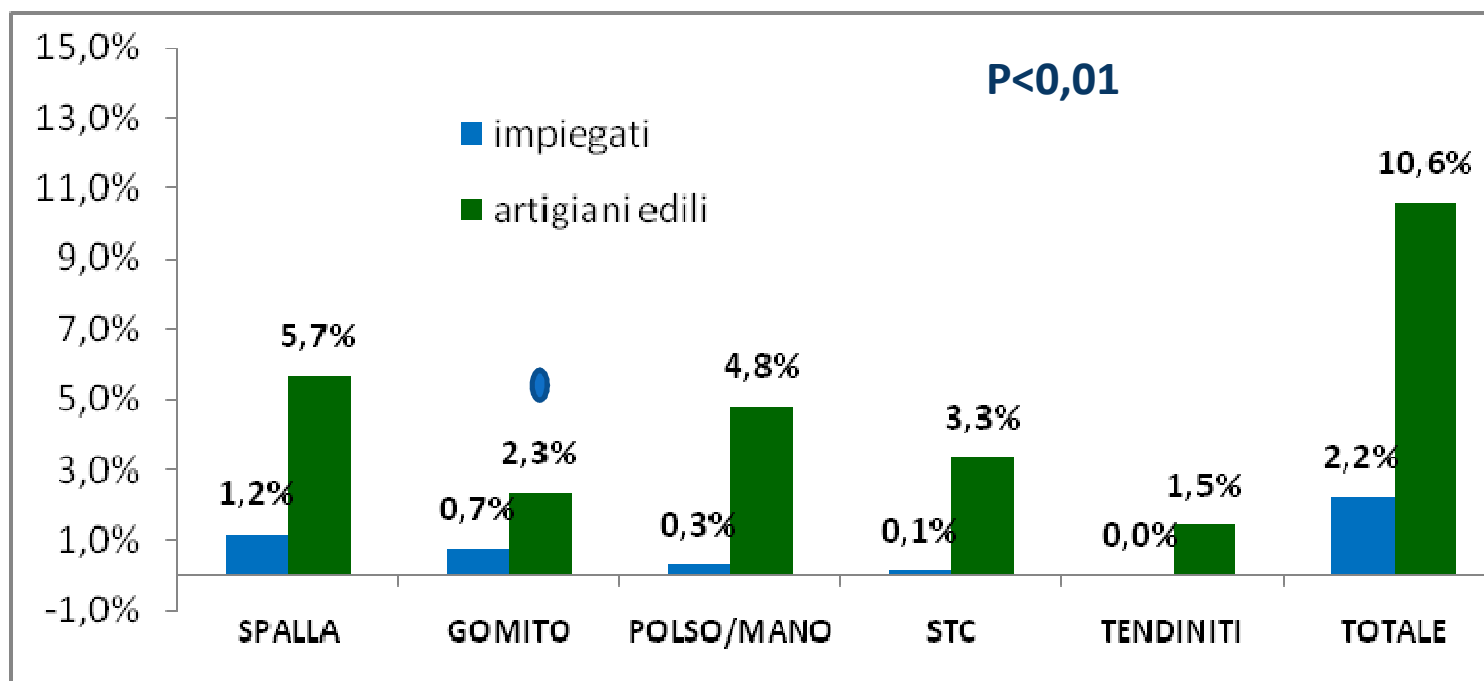
MURATORI – PATOLOGIE DELL'ARTO SUPERIORE



GENERAL POPULATION (MALE) = 3,5%



MURATORI >35 anni-PATOLOGIE DELL'ARTO SUPERIORE



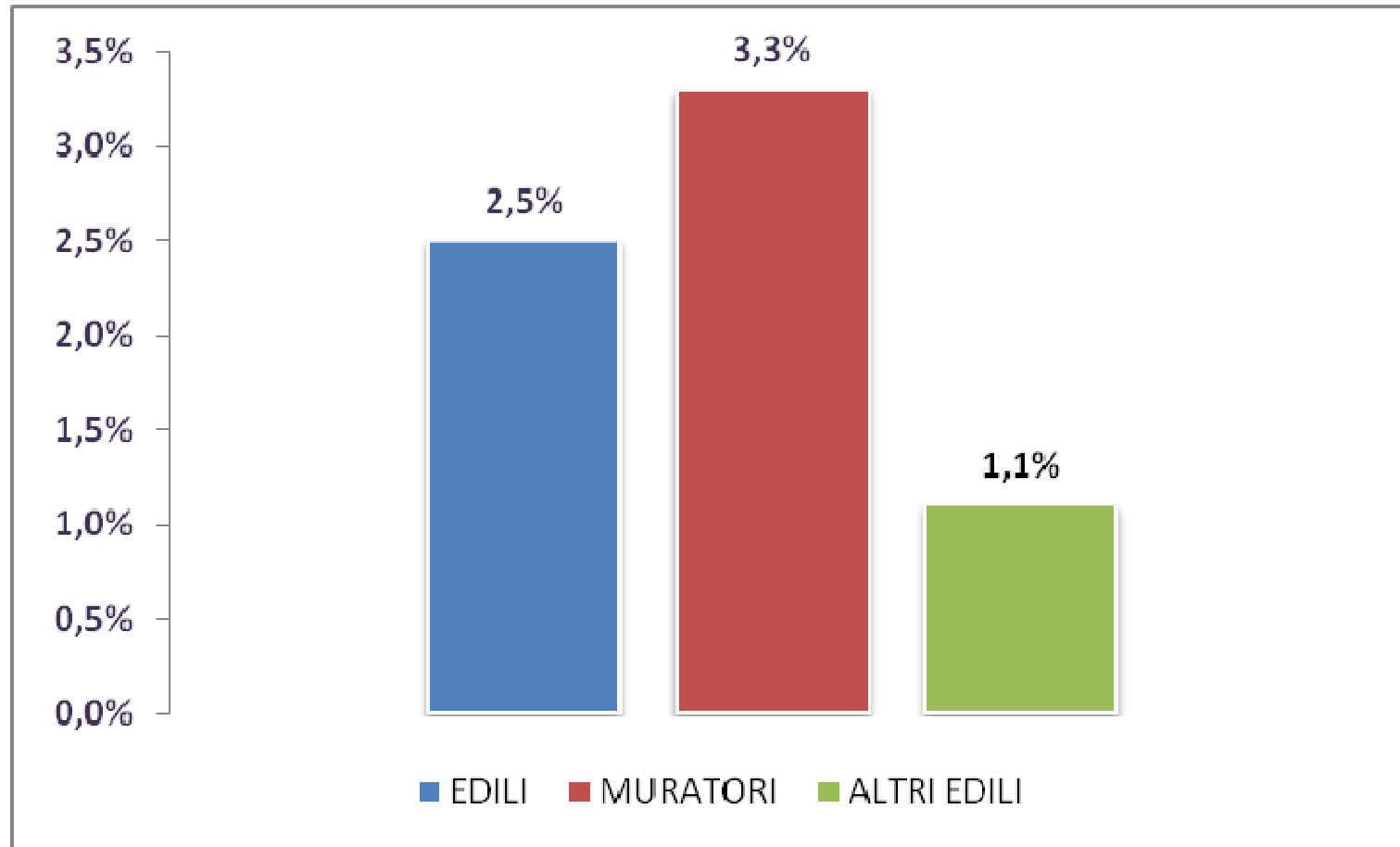
● non sig.



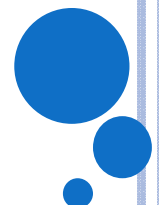
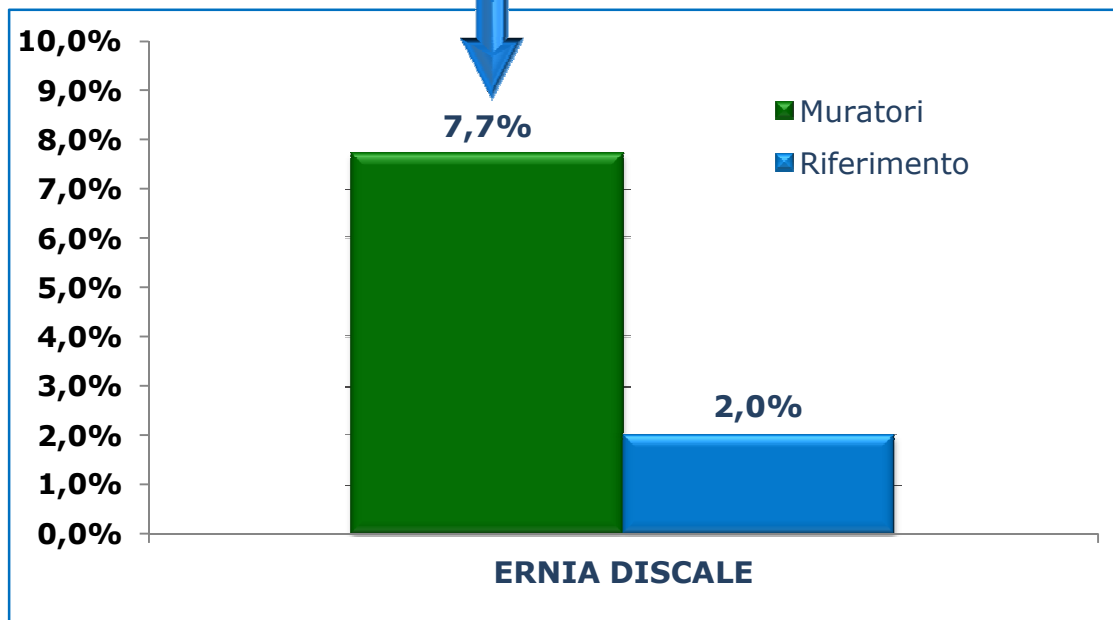
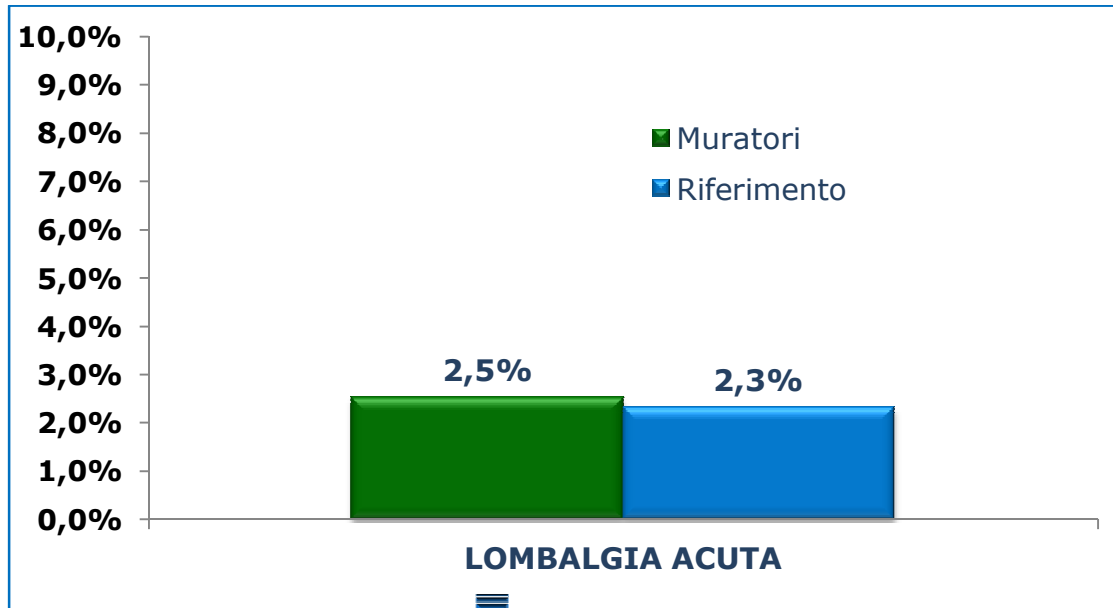
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ETÀ > 35 - SINDROME DEL TUNNEL CARPALE



MURATORI- LOMBALGIA ACUTA E ERNIA DEL DISCO





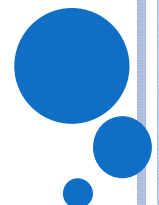
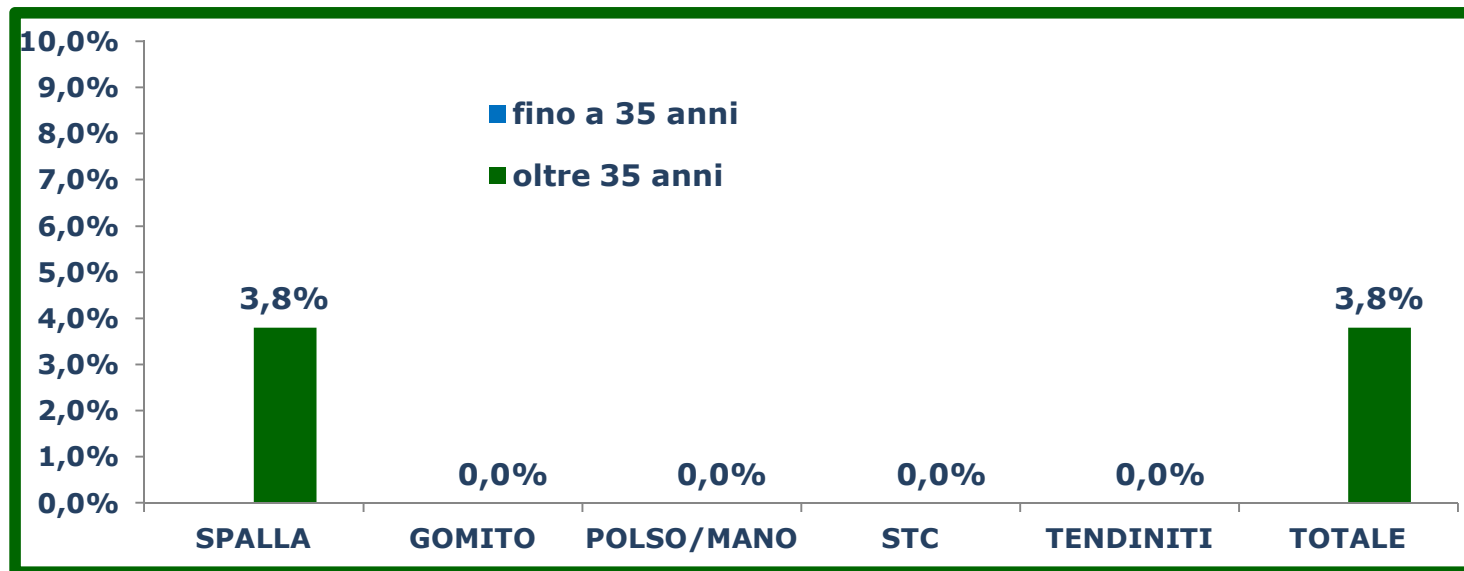
RISULTATI

IMBIANCHINI

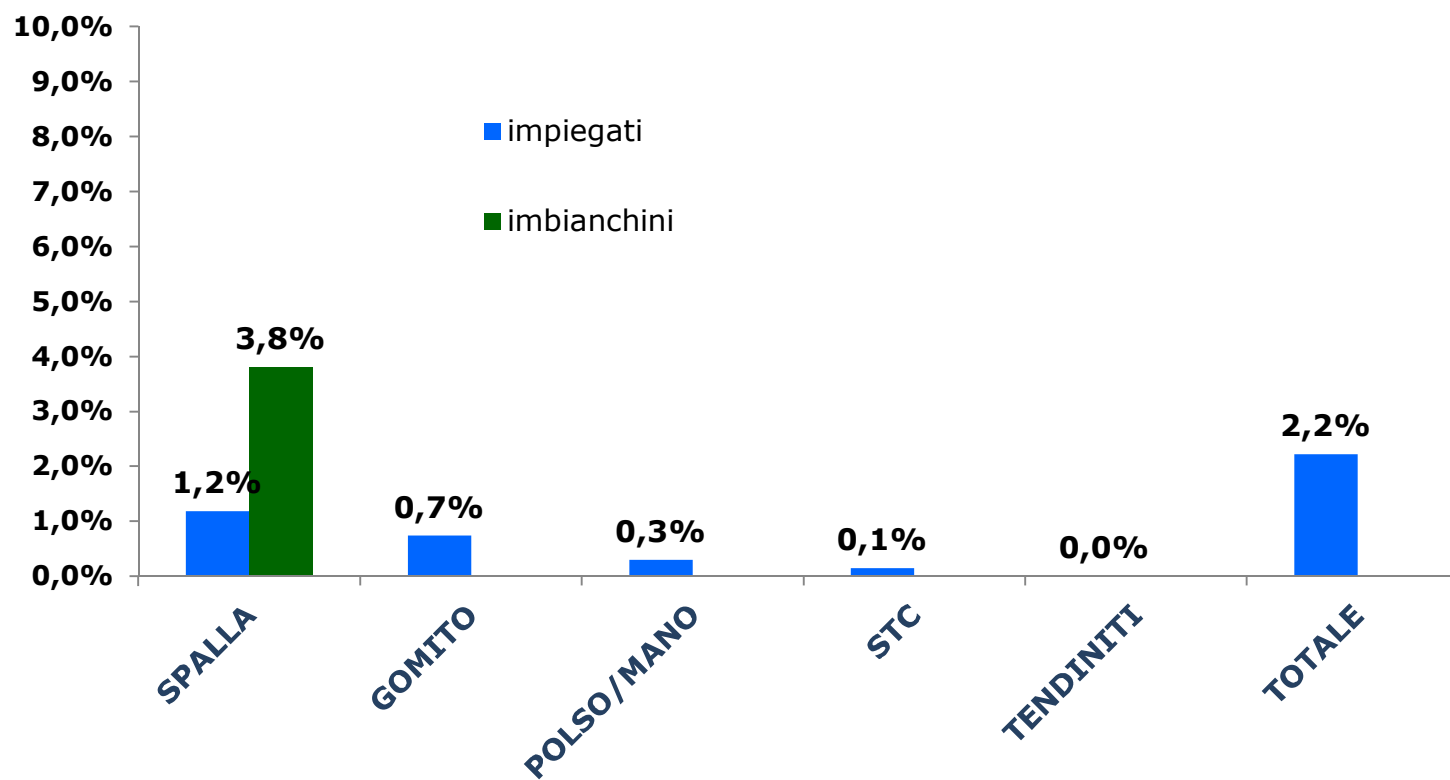


IMBIANCHINI – PATOLOGIE DEGLI ARTI SUPERIORI

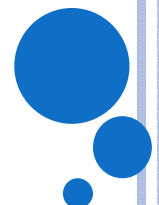
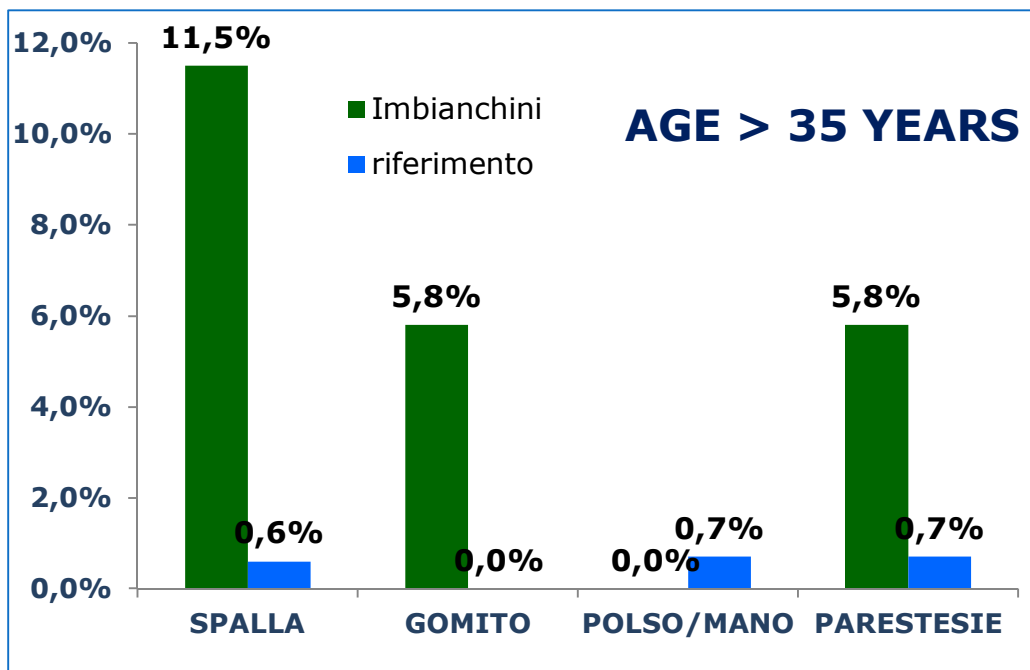
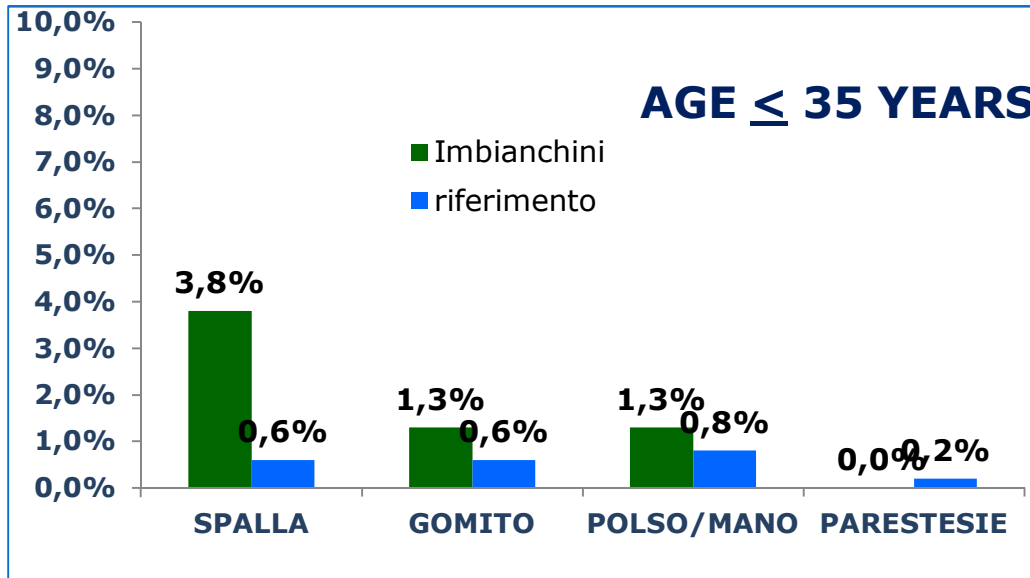
VARIABLE	N (%)
Subjects	258 (100%)
Median age (years)	38
Median length of service (years)	12



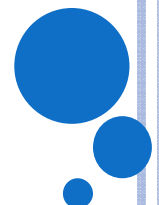
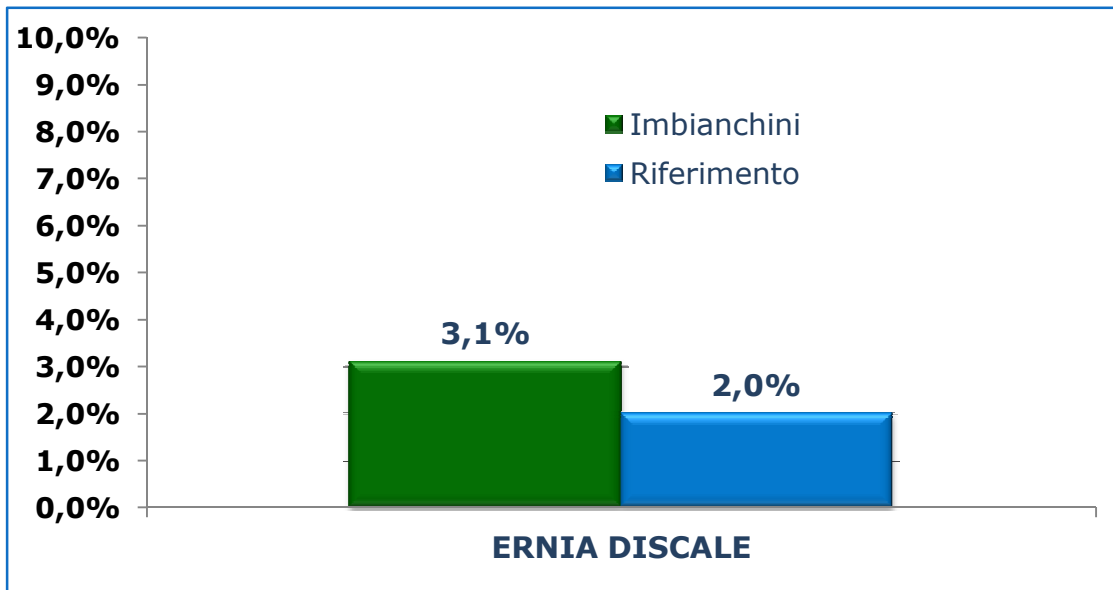
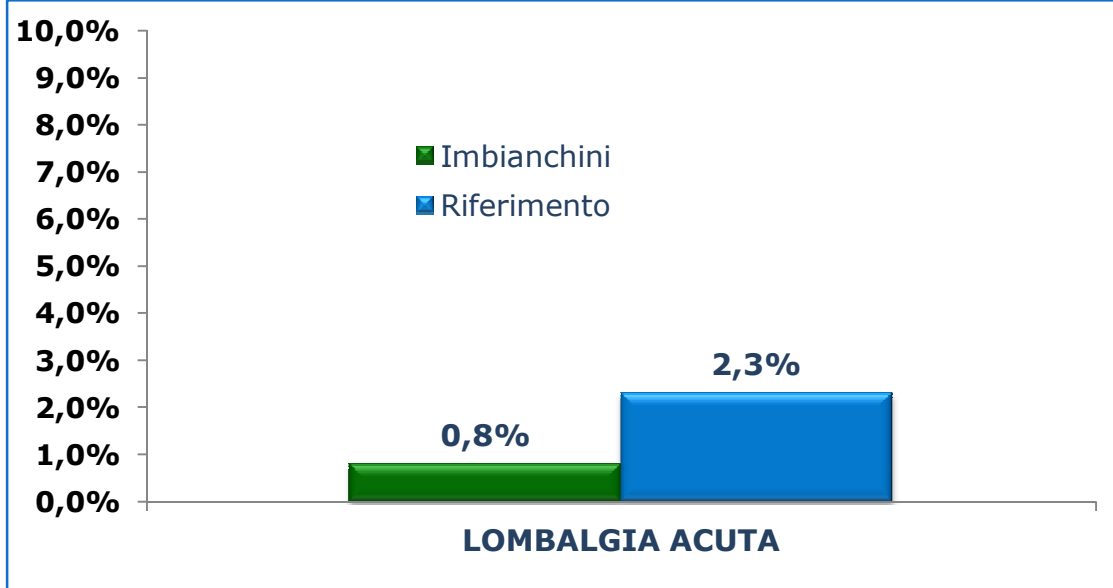
IMBIANCHINI >35 anni – PATOLOGIE DEGLI ARTI SUPERIORI



IMBIANCHINI – SCREENING DISTURBI: SOGGETTI POSITIVI



IMBIANCHINI – LOMBALGIA A CUTA E ERNIA DEL DISCO

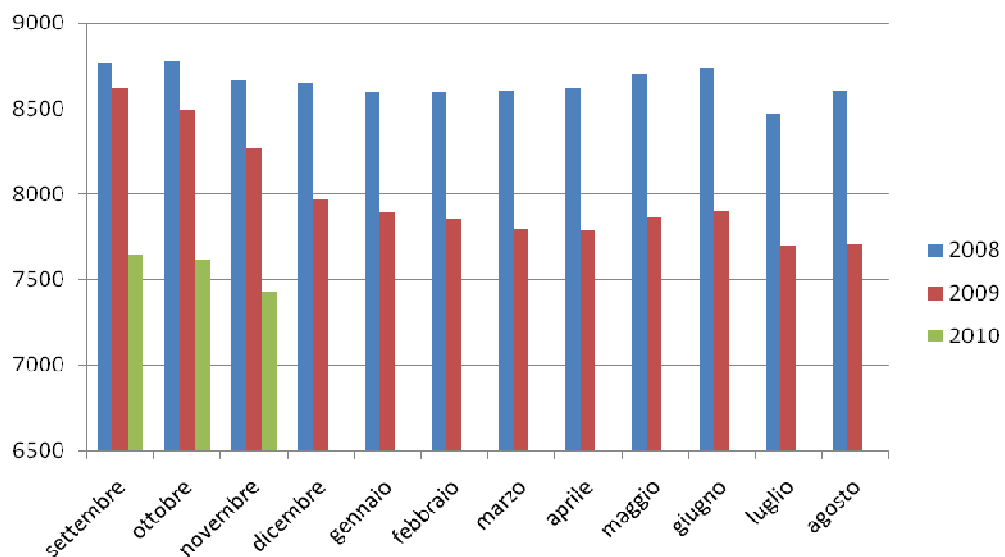




CONCLUSIONI

EFFETTI DELLA CRISI ECONOMICA

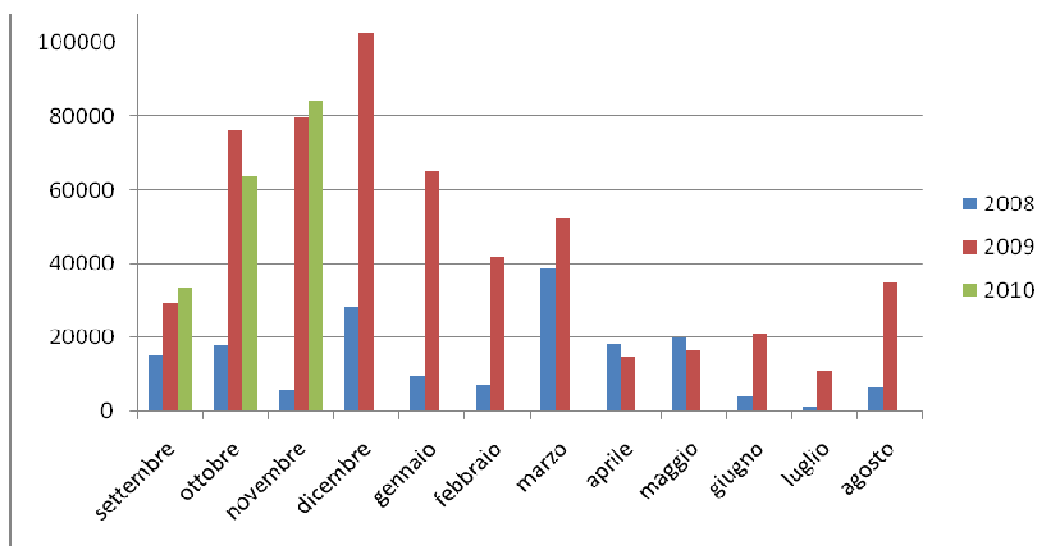
ADDETTI ISCRITTI CPTA-BG 2008-2010



- 10%

CASSA INTEGRAZIONE ORDINARIA – N. ORE

+ 200%



PATOLOGIE DEGLI ARTI SUPERIORI

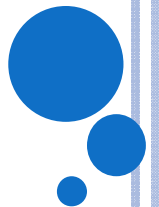
1. **Frequenza di casi decisamente superiore rispetto al gruppo di riferimento**
2. **Alta prevalenza di soggetti con positività anamnesticca (soglia +) nella classe di età > 35 anni**
→ campanello d'allarme

Scarsa attenzione al problema in passato

Effetto lavoratore sano?

Selezione del campione? (abbandono del lavoro/passaggio in proprio)

Peculiarità del gruppo (lingue- 25% extracomunitari, sottostima disturbi, imprese molto piccole→ timore di perdere lavoro...)



LOW BACK DISORDERS

2. **Prevalenza di ernia discale 2-3 volte quella della popolazione generale**

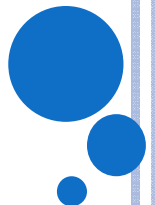
2. **Bassa prevalenza di soggetti con lombalgia acuta (ultimo anno)**

Esposizione a movimentazione manuale di carichi ATIPICA, ma RILEVANTE

Sottogruppi a diversa esposizione(es.imbianchini)

Maggiore attenzione a disturbi/patologie del rachide in passato

Peculiarità del gruppo (lingue- 25% extracomunitari, sottostima disturbi, imprese molto piccole □ timore di perdere lavoro...)





GRAZIE
per
l'attenzione