

Epidemiology of Low Back Pain in Elite Throwers

Throwing is bad for the spine, while running is not

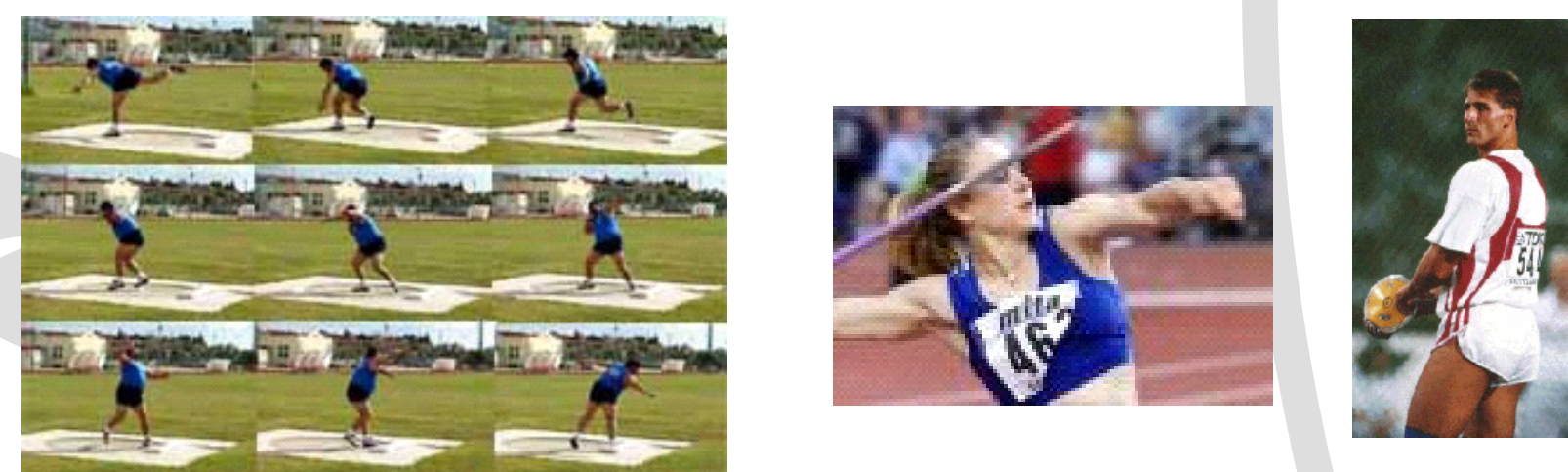
Thomas Bortolami, Anna Boniolo, Diego Sarto, Francesca Gasbarro, Mauro Alianti, Stefano Negrini
Faculty of Motor Sciences, Bologna & Padova Universities - Orthopaedic Rehabilitation Service,
S. Orsola, Bologna - ISICO (Italian Scientific Spine Institute), Milano (Italy)

1 Introduction

Movement and leisure time are physical activities useful for low back pain (LBP), but doubts remain for sports. In a previous study we concluded that running could not influence negatively the spine. However, it was not possible to verify if there was a pre-selection, because LBP sufferers had already stopped their activities, or if there were some kind of genetic factors involved. Because of this uncertainty, we planned another study in a completely different population composed of high level athletes. In the literature there are no data on LBP in athletic specialties like Discus, Hammer and Javelin Throw and Shot Put: when compared to runners, these athletes are usually overweight, practice activities requiring big efforts during competition and training, with low-grade aerobic needs.

2 Aim

To study in elite throwers the epidemiology of LBP and its relationship with their activity. We also wanted to compare gathered data with those of a previous paper presented at ISSLS in Vancouver 2003 reporting on elite runners and normal people, in order to understand more about LBP and sports in general.



3 Methods

All 75 Throwers (39 males - 19 Javelin, 19 Discus, and 23 Hammer Throw, 14 Shot Put) participating to all elite competitions in 2002 in Northern Italy agreed to enter the study and completed an already validated questionnaire to gather information about LBP incidence and prevalence, physical and temporal characteristic, correlation with training and competitions. Throwers were 24.5 years old (range 14-55); they trained 4.9 times/week, and participated to 2 competitions/month. Statistics: Chi-square test and Fisher's Exact test.

4 Results: LBP, epidemiology

	Throwers n. 75	Normals n. 50	Runners n. 191	P
Life time prevalence				
LBP	86.7%	72%	51.8%	<0.001
Sciatica	30.7%	48%	19.9%	<0.001
Number of episodes/year				<0.001
0-1	35.4%	36%	23.5%	
2	13.8%	17%	47.5%	
3 or more	50.7%	47%	29%	
Worst episode				<0.001
Acute (<7 days)	56.9%	75%	64.6%	
Sub-acute (7-180 days)	36.9%	19%	28.3%	
Chronic (>6 months)	6.2%	6%	7.1%	
Usual episode				NS
Acute (<7 days)	87.7%	92%	75%	
Sub-acute (7-180 days)	12.3%	18%	25%	
Disability				
Stop work (once or more)	47.7%	25%	23%	<0.0001
Stop training (once or more)	50.8%		41%	<0.001
Reduce training (once or more)	72.3%		56%	<0.0001

5 Results: LBP, training and competitions

	Throwers	Runners	P
LBP before beginning competitions	87.3%	78%	<0.001
LBP begun in the first year of activity	18.9%	28%	<0.001
Already existing LBP not worsened by sport activities	62.5%	73%	<0.001

80% used a lumbar support. In 37.4% pain worsened during training, in 41.3% immediately after and in 10.7% the day after.

6 Results: LBP and gender

LBP was significantly higher in males who had greater disability, trained more and adhered less to prescribed therapies than females.

7 Discussion

Prevalence and duration of acute LBP in throwers are higher than those reported in the general population and those we found in elite runners. In throwers, both LBP and sciatica episodes claim to become recurrent due to highly repetitive efforts. LBP episodes assume an important role, inducing to stop activities with an higher rate, even if a benign aspect of these episodes is constant and chronicity is present in a normal percentage. In elite throwers pain directly worsens during training or immediately after, demonstrating that induced stress forces are dangerous for the spine. In the vast majority of cases, LBP develops because of this sport. Worsening is not greatly pronounced over time.

8 Conclusion

It is always possible that, in an epidemiological study on elite athletes such as the one presented here, the studied population is selected so to reduce the presence of LBP sufferers (already excluded from races and training because of their pain), while genetic factors could in a way change the "background" of these people. On the other hand, high level athletes are selected according to physical and mental characteristics that can also avoid to surcharge the significance of LBP. We tried to overcome these limitations of a previous study on runners by planning another one in a totally different kind of effort, but again in individual, athletic sport activities. Our results suggest that these kinds of sport are awful for the spine, but also state that athletes continue their activity in spite of pain. This gives strength to our previous results on the low-level risk (if any) of running.

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