

Electronic Supplementary Material Table S3 Included high-quality studies comparing athletes with controls

Reference	Sports discipline	Final sample size	Age [years] mean $\pm$ SD ^a (range)	Level	Res- pon- se [%]	Loca- liza- tion	Recall periods	Prevalence [%]	Comments
Alricsson and Werner 2005 [50]	Cross-country skiing	120 (M: 58%, F: 42%)	18 $\pm$ 1	Top national level	92	B, LB, TH, C	LT, 3-mo	LT: B: 47, LB: 44, TH: 7, C: 3; 3-mo: B: 26, C: 11	- Significantly higher 3-mo prevalence for BP (p = 0.02) and NP (p = 0.01) in controls compared to athletes
	Controls	993 (M: 49%, F: 51%)	18 $\pm$ 1	High school students	68	B, C	3-mo	3-mo: B: 37, C: 21	
Bahr et al. 2004 [29]	Cross-country skiing	257 (M: 165, F: 92)	M: 23 $\pm$ 5, F: 21 $\pm$ 4	Qualified for national championships	100	LB	LT, 12-mo, 7-d	LT: 65, 12-mo: 63, 7-d: 24	- Significantly higher LT prevalence rates in skiers and rowers than in controls, - Significantly higher 12-month prevalence for skiers than for controls
	Rowing	199 (M: 131, F: 68)	M: 21 $\pm$ 6, F: 22 $\pm$ 5		100			LT: 63, 12-mo: 55, 7-d: 25	
	Orienteering	227 (M: 129, F: 98)	M: 24 $\pm$ 7, F: 23 $\pm$ 6		99			LT: 57, 12-mo: 50, 7-d: 19	
	Controls	158 (M: 95, F: 63)	M: 24 $\pm$ 5, F: 22 $\pm$ 4		66			LT: 51, 12-mo: 47, 7-d: 20	
Baranto et al. 2009 [49]		T: 71 (M)	26 (18-41)	Swedish top male athletes, active at least since the age of 10 years	-	B	LT	78	- Obvious difference between athletes and controls, with LT prevalence of 78 % and 38 %, respectively - They did not mention if these results were significant
	Weight lifting	21	Med: 30 (18-40)					71	
	Wrestling	13	Med: 24 (22-41)					77	
	Orienteering	18	Med: 25 (20-35)					56	
	Ice hockey	19	Med: 24 (19-31)					90	
	Controls	21	Med: 28 (22-38)					38	
Brynhildsen et al. 1997 [34]	Basketball	150 (F)	Med: 21 (16-31)	Swedish first league clubs	85	LB	LT, 7-d	LT: 53, 7-d: 21	- Significantly higher LT prevalence in volleyball and basketball players compared to soccer players and controls (p< 0.05) - Significantly higher PP among athletes than controls (p< 0.01)
	Volleyball	205 (F)	Med: 22 (16-35)					LT: 63, 7-d: 34	
	Soccer	361 (F)	Med: 21 (14-36)					LT: 42, 7-d: 32	
	Controls	113 (F)	Med: 20 (15-36)		75			LT: 43, 7-d: 18	
Haydt et al. 2012 [47]	Field hockey	90 (F)	19 $\pm$ 1 (18-22)	NCAA Division III intercollegiate	-	LB	I	56	- No significant differences between athletes and controls
	Controls	98 (F)	20 $\pm$ 1 (18-24)	age-matched control group				55	
Selanne et al. 2014 [54]	Ice hockey	121 (M)	15 (14-16)	National level	93	LB, UB, N	3-mo	LB: 54, UB: 31, N: 44	- Significantly higher LBP prevalence in athletes than controls
	Controls	618 (M)		Age-matched school boys				LB: 35, UB: 29, N: 48	
Swärd et al. 1991 [48]	Gymnastics	24 (M)	Med: 23 (19-29)	Present or previous members of the Swedish national team	-	B	LT, PP	LT: 79, PP: 38	- Significantly higher BP LT prevalence in gymnastics than controls (p< 0.001)
	Controls	16 (M)	Med: 26 (23-36)	Non-athletes, randomly selected				LT: 38, PP: 0	
Tunas et al. 2014 [31]	Football	277 (F)	22 $\pm$ 4 (18-32)	Elite	98	LB	LT, 12-mo, 7-d	LT: 61, 12-mo: 57, 7-d: 24	- No significant differences between athletes and controls
	Handball	190 (F)	22 $\pm$ 3 (18-32)		99			LT: 63, 12-mo: 59, 7-d: 26	
	Control	167 (F)	26 $\pm$ 4 (18-32)		43			LT: 65, 12-mo: 60, 7-d: 31	

B=back; BP=back pain; C=cervical spine; NCAA=National Collegiate Athletic Association; d=day; F=female; I=Incidence; LBP=low back pain; LT=lifetime; M=male; mo=month; Med=median; N=neck; NP=neck pain; PP=point prevalence; SD²=standard deviation; T=total; TH=thoracic; UB=upper back; a Except where otherwise indicated