



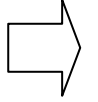
























Supplementary Table. Summary of “good quality” prevalence studies retained for complete review








Study # Type of outcome [ref.]	Authors, year	Country, Place Study	Study design	Sampling frame	Final sample size / response rate	Definiti on of age	Definition of back pain	Study results	Trend	Quality score
1 B [32]	Thomas et al, 2004*	United Kingdom, North Staffordshire (North Staffordshire Osteoarthritis Project - NorStOP)	Cross- sectional postal survey	Adults aged ≥ 50 years registered with three primary care general practices	7,878 / 71.3%	50-59 60-69 70-79 80+	“In the past 4 weeks, have you had pain that has lasted for one day or longer in any part of your body”. Those responding positively were asked to shade their painful areas on a full body manikin. The low back area was recorded by using a standard transparent template marked with its border. Also back pain interfering with daily activities.	Consistent decline in prevalence of low back and neck pain with increasing age. Among back pain sufferers, the proportion of low back pain interfering with daily activities increased with increasing age; however, the prevalence of back pain interfering with daily activities among all subjects was stable.	 	75
3 C F [36]	Walker et al, 2004	Australia	Cross- sectional postal survey	Residents of Australia aged ≥ 18 years. Stratified sample for age, gender and state using 1996 Australian Census weighted data	1,913 / 69.1%	18-29 30-39 40-49 50-59 60-69 70+	Diagram of a mannequin that defined the low back area. “Have you had low back pain in the past 6 months”. CPG. ¹	The prevalence of CPG I (low intensity pain, low disability) decreased with increasing age, and grade II (high intensity pain, low disability) remained relatively constant, while grades III (high disability, moderately limiting) and IV (high disability, severely limiting) increased to the fifth decade and then remained stable.	 	100
7 C F [35]	George, 2002*	Canada, Saskatchewan (Saskatchewan Health and Low Back Pain Study)	Six-month longitudinal prospective postal study	Age-stratified probability sample of 2,184 non- institutionalised Saskatchewan residents aged 20-69 years	1,110 / 55.1% at baseline and 628 / 74.1% at follow-up	Not stated	Six-month cumulative incidence of clinically significant low back pain. Diagram of a mannequin defined the low back area. CPG was used to identify clinically significant low back pain (grades II, III and IV).	Age was not associated with the 6-month cumulative incidence of clinically significant low back pain.		83
8 A C E F [33]	Cassidy et al, 1998	Canada, Saskatchewan (Saskatchewan Health and Low Back Pain Study)	Cross- sectional postal survey	Age-stratified probability sample of 2,184 non- institutionalised Saskatchewan residents aged 20-69 years	1,131 / 55.1%	20-29 30-39 40-49 50-59 60-69	Mannequin diagram to define the anatomic location of low back pain and a direct question: “Do you have low back pain at the present time, that is, right now?” (point prevalence) / “In your lifetime, have you ever had low back pain?” (lifetime prevalence) / CPG - 6-month period prevalence.	Little variation in estimates over age groups for point and lifetime prevalence. Prevalence of grade I low back pain decreased with increasing age. That of grade II low back pain remained constant with increasing age. The prevalence of disabling low back pain (grades III and IV) increased with increasing age.	CPG I:  CPG II:  CPG III+IV: 	92

¹Chronic Pain Grade (63. Von Korff M, Ormel J, Keefe FJ, Dworkin SF. Grading the severity of chronic pain. Pain 1992;50(2):133-49.

Study # Type of outcome [ref.]	Authors, year	Country, Place Study	Study design	Sampling frame	Final sample size / response rate	Definiti on of age	Definition of back pain	Study results	Trend	Quality score
9 A C E F [34]	Côté et al, 1998	Canada, Saskatchewan (Saskatchewan Health and Low Back Pain Study)	Cross- sectional postal survey	Age-stratified probability sample of 2,184 non- institutionalised Saskatchewan residents aged 20-69 years	1,131 / 55.1%	20-29 30-39 40-49 50-59 60-69	Neck pain: mannequin diagram and a direct question: “Do you have neck pain at the present time, that is right now?” (point prevalence) / “In your lifetime, have you ever experienced neck pain?” (lifetime prevalence) / CPG - 6-month period prevalence.	The prevalence of grade I neck pain decreased steadily with increasing age. That of grades II and III-IV (combined) did not vary significantly across the age groups.	CPG I:  CPG II+III+IV: 	92
10 C F [38]	Goubert et al, 2004	Belgium	Cross- sectional postal survey	2,485 members of an access panel composing a representative sample of the Belgian population aged ≥ 17 years	1,624 / 65.4%	17-25 26-35 36-45 46-55 56-65 > 65	Low back pain for one day or longer in the past 6 months (6-month period prevalence). CPG was used to classify participants into one of five categories (grades 0 to IV).	No statistically significant differences between age groups for overall 6-month period prevalence. When classified with the CPG, however, the prevalence of grades I and II low back pain tended to decrease with age, while that of grades III and IV tended to increase.	CPG I+II:  CPG III+IV: 	83
11 A D F [51, 52]	Picavet and Schouten , 2003	The Netherlands (Dutch Musculoskeletal Complaints and Consequences Cohort study - DMC ₃ -study)	Cross- sectional postal survey	Random sample of 7,818 persons aged ≥ 25 years, stratified by age and gender, taken from the 1998 population register	3,664 / 46.9%	25-44 45-64 65+	“Did you have pain in the (a-neck, shoulders or higher part of the back or b-lower part of the back) during the past 12 months?” Also point prevalence and prevalence of “chronic” pain (> 3 months).	For neck, shoulders and higher back, no change of 12- month prevalence with increasing age. For low back, there was a small decline with increasing age (not significant).		75
12 C [45, 46]	Bassols et al, 1999	Spain, Catalonia	Cross- sectional telephone survey	Random sample of 2,142 non-institutionalised adults (≥ 18 years), stratified by age, sex and residential area, taken from the 1991 electoral census	1,964 / 91.7%	20-30 31-50 51-70 71-90	Any pain complaint in the last 6 months in back or neck, regardless of intensity and duration.	The prevalence for back and neck pain amongst all age groups was similar.		75
14 A F [31]	Elliott et al, 1999	United Kingdom, Grampian region of Northeast Scotland	Cross- sectional postal survey	Random sample, stratified for age and sex, of 5,036 patients aged \geq 25 years, drawn from 29 general practices in UK	3,605 / 82.3%	25-34 35-44 45-54 55-64 65-74 75+	Whether pain or discomfort was present (in the back), and if so, if it had started longer than 3 months ago (“chronic” pain).	The point prevalence of “chronic” back pain rose after age 25 to peak in the 55-64-year-old range with a falling prevalence after age 65.		83

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19 G [43]	Finsen, 1988	Norway	Cross- sectional, postal survey	Random sample of 517 individuals from the census list of a semi-rural municipality in an age pattern conforming to that of a previously reported population with hip fracture	457 / 88.4%	50-59 60-69 70-79 80-89 ≥ 90	“Whether they had been significantly bothered by back pain at any time during the last 10 years.”	The prevalence of back pain decreased quite steeply for men from 50-59 years to 90+; among women, it was quite stable.	Men:  Women: 	75
20 E F [48]	Brattberg et al, 1989	Sweden	Cross- sectional, postal survey	1,009 randomly selected individuals, aged 18-84 years, in a county of Sweden	827 / 93%	18-44 45-64 65-84	“Do you have/have you had any pain or discomfort in (the neck, upper back, lower back)” for > 6 months. Those who said their pain was ‘like being stiff after exercise’ or worse and who reported pain which troubled and affected them to ‘quite a high degree’ or more were considered to have “obvious pain”.	The prevalence of obvious back pain that lasted for more than 6 months increased from the age group 18-44 to the 45-64 group and then decreased for both men and women.		75
24 D [30]	Mason, 1994	United Kingdom (1993 OPCS Omnibus Survey- March, April and June)	Cross- sectional monthly face-to-face interview survey	Adults aged ≥ 16 years randomly sampled from the Postcode Address File, stratified by region, the proportion of households renting from the local authorities and the proportion in which the head of household is in Socio-economic Groups 1-5 or 13	6,106 (about 2,000 each month) / 77%-80%	16-24 25-34 35-44 45-54 55-64 65+	“During the past 12 months, that is, since..., have you had any back pain which lasted for more than one day?” Excluding back pain due to menstrual periods or feverish illness.	The proportion of low back pain tended to increase with increasing age, up to the ‘65 and over’ age group. However, the proportion fell to 38% in the oldest age group. Low back pain with activity restriction increased with increasing age.	 	83
26 D E [39]	Lau et al, 1995	China, Hong Kong	Cross- sectional interview survey	Adult residents of two housing blocks in Shatin, a new town in Hong Kong	652 / 80%	< 20 20-29 30-39 40-49 50-59 60-69 70+	“Subjects were asked whether they had ever had back pain lasting for more than a day in an area (illustrated with a diagram) between the lower costal margins and the gluteal folds, and whether they had had such pain within the past 12 months.”	There were no clear patterns in relation to age.		75

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28 B [44]	Hagen et al, 1997	Norway, Oslo and Norland counties	Cross-sectional postal survey	20,000 randomly selected individuals aged 20-79 years in two counties in Norway	11,780 / 58.9%	20-34 35-49 50-64 65-79	“Presence of pain (in back/lower limbs, neck/shoulders or both) during the previous month.”	The prevalence of neck/shoulder pain decreased with increasing age. There was no pattern for low back/lower limbs pain. The prevalence of combined neck/shoulders and back/lower limbs pain increased up to the 50-64 year-old category and decreased thereafter.	Neck/shoulders:  Low back/lower limbs:  Combined: 	75
29 D [49]	Jacobsson et al, 1989	Sweden, Malmö	Cross-sectional examination survey	Random samples of 450 women and 450 men aged 50-70 years and living in the Malmö area, invited to participate in a second health survey in 1985	696 / 77% answered a questionnaire – 552 / 61% were examined – 445 / 49.4% accepted to participate to the second survey	50-54 55-59 60-64 65-69	“Whether pain or stiffness (in back or neck) had been present, continuously or intermittently, for more than 6 weeks during the preceding 12 months. Low back pain, with or without sciatica, was considered present when pain was localized to the lumbar region as described by Anderson (1977). Neck pain, with or without cervical brachialgia, was diagnosed when pain was located within the triangle between the occipital process, the medial corner of scapula, and the acromion.”	The prevalence of back and neck pain increased up to about 60 years and then declined slightly with increasing age.		83
30 C E [50]	Von Korff et al, 1988*	United States, Seattle	Cross-sectional postal and telephone survey	Stratified random sample of 1,500 enrollees of Group Health Cooperative of Puget Sound, aged 18-75 years, residing in the greater Seattle area	1,016 / 80.3%	18-24 25-44 45-64 65+	Persons were asked if they ever had a back pain problem that had lasted a whole day or more or that had occurred several times in a year (excluding fleeting or minor pains). They were also asked if the pain was present in the past 6 months.	Back pain prevalence showed no relationship to age.		75
31 B E F [41]	Mäkelä et al, 1991	Finland (Mini-Finland Health Survey)	Cross-sectional interview and examination survey	Two-stage cluster sample of 8,000 inhabitants of Finland aged ≥ 30 years or more, drawn from the population registers	7,217 / 90.2%	30-44 45-54 55-64 65-74 75+	Lifetime and one-month period prevalence of “chronic” neck pain (duration ≥ 3 months) on examination.	The prevalence of “chronic” neck pain increased with age up to the age of 55 to 64 years, and decreased thereafter.		75

Study # Type of outcome [ref.]	Authors, year	Country, Place Study	Study design	Sampling frame	Final sample size / response rate	Definiti on of age	Definition of back pain	Study results	Trend	Quality score
33 A D [42]	Kohlman n et al, 1995	Germany, Lübeck	Cross- sectional postal survey	Systematic random sample of city inhabitants officially registered and of German nationality	3,109 / 81%	25-34 35-44 45-54 55-64 65-74	Questions whether respondent had back pain on the day answering the survey (“today”), about pain intensity on a scale from 1 to 10, about back pain in the last 12 months in the time before, on treatment for back pain during the last 12 months and on functional capacity.	Crude figures for point prevalence of general back pain in men and women increased from age 25 to the 5 th decade and decreased to age 65 to 74. The prevalence of heavy (grade 3) back pain increased monotonously with increasing age.	General back pain:  Heavy back pain: 	75
34 A E [37]	Skovron et al, 1994	Belgium	Cross- sectional interview survey	Probability sample of Belgians aged ≥ 15 years, stratified on gender, age, social class, and habitat	3,829 / 86%	15-19 20-34 35-49 50-64 65+	a) Ever had low back pain b) Daily low back pain	Prevalence of a) increased from 15-19 years to 65+ years. In multivariate analyses, the odds ratios increased until 64 years and then decreased. Prevalence of b) increased from age 15-19 years to age ≥ 65 years. In multivariate analyses, the odds ratios increased until 64 years and then decreased.		75
43 D [47]	Santos- Eggiman et al, 2000	Switzerland (MONICA Project)	Cross- sectional questionnair e survey	Probabilistic, two-stage, sampling of non- institutionalised residents of three cantons (Vaud, Fribourg and Ticino)	3,227 / 62%	25-34 35-44 45-54 55-64 65-74	One-year period prevalence of ache, pain, or discomfort located in the lower back (indicated by a shaded area on a diagram) with or without sciatica, categorised according to its duration: 1) any duration, 2) > 7 days, 3) > 30 days (Nordic Questionnaire).	Age was not associated with low back pain. However, the prevalence of low back pain for > 7 days and > 30 days increased with increasing age in both genders.	Combined :  LBP > 7 days: 	92
45 G [29]	Kellgren et al, 1953	United Kingdom, Leigh, South Lancashire	Cross- sectional interview and examination survey	Multistage random sample of individuals aged ≥ 15 years	3,515 / 98%	15-29 30-49 50+	Disc disorders in the past 5 years.	The maximum incidence of disc disorders was found in the 5 th decade.		83
47 B [40]	Hartvigs en et al, 2004	Denmark (Longitudinal Study of Aging Danish Twins - LSADT)	Population- based prospective cohort study of Danish twins	All Danish twins born since 1870, aged ≥ 70 years and more, interviewed in 1995, 1997, 1999 and 2001	4,484 / 80.4%	70-74 75-79 80-84 85+	“Back pain, acute low back pain or lumbago” during the past month. “Pain or stiffness in the neck or shoulders” during the past month.	No significant differences or consistently increasing or decreasing trends were found between the 5-year age groups for any of the outcome in cross-sectional nor longitudinal analyses.		75

* Possible conflict; article was graded by an independent reviewer (HB).

A: Point prevalence B: One-month period prevalence C: 6-month period prevalence D: One-year period prevalence E: Lifetime prevalence F: “Chronic” back pain G: Other frequency measure

M: Benign or mixed problems S: Severe problems

References of articles assessed but not included in the review: [7, 26, 53, 56, 58, 59, 64-86]. Notice that scientific quality of articles was assessed strictly with regards to the question under study, which was rarely among the specific objectives of individual studies.

