Study	Drains n/N	No drains n/N	RR (95%CI Fixed)
Hip replacement			
Beer 1991	0/12	0/12	
Crevoisier 1998	0/33	0/33	
Hill 2003	1/282	2/295	
Kim (THA) 1998	0/48	0/48	
Mengal 2001	0/76	0/76	
Niskanen 2000	0/27	0/31	
Ovadia 1997	0/18	0/12	
Ravikumar 2001	1/12	2/13	
Ritter 1994	0/78	0/62	
Widman 2002	1/10	1/12	
Subtotal	3/596	5/594	
Knee replacement			
Beer 1991	0/38	0/38	
Crevoisier 1998	0/16	0/16	
Esler 2003	0/50	0/50	
Holt 1997	0/69	0/67	
Kim (TKA) 1998	0/69	2/69	
Mengal 2001	0/52	0/52	
Niskanen 2000	0/20	0/19	
Ovadia 1997	0/32	0/26	
Ritter 1994	0/137	0/138	
Subtotal	0/483	2/475	
Hip and knee replacement			
Nixon 2000	1/646	2/646	
Subtotal	1/646	2/646	
Total	4/1725	9/1715	

.1 .2   1   5 10
Favors drains   Favors no drain

Fig. E-1

The prevalence of deep wound infection associated with the different surgical procedures with respect to the use of drains. The values are given as the number of patients with a deep wound infection/number of patients in group, with a summation of the totals and the relative risk (RR) and 95% confidence intervals (CI).
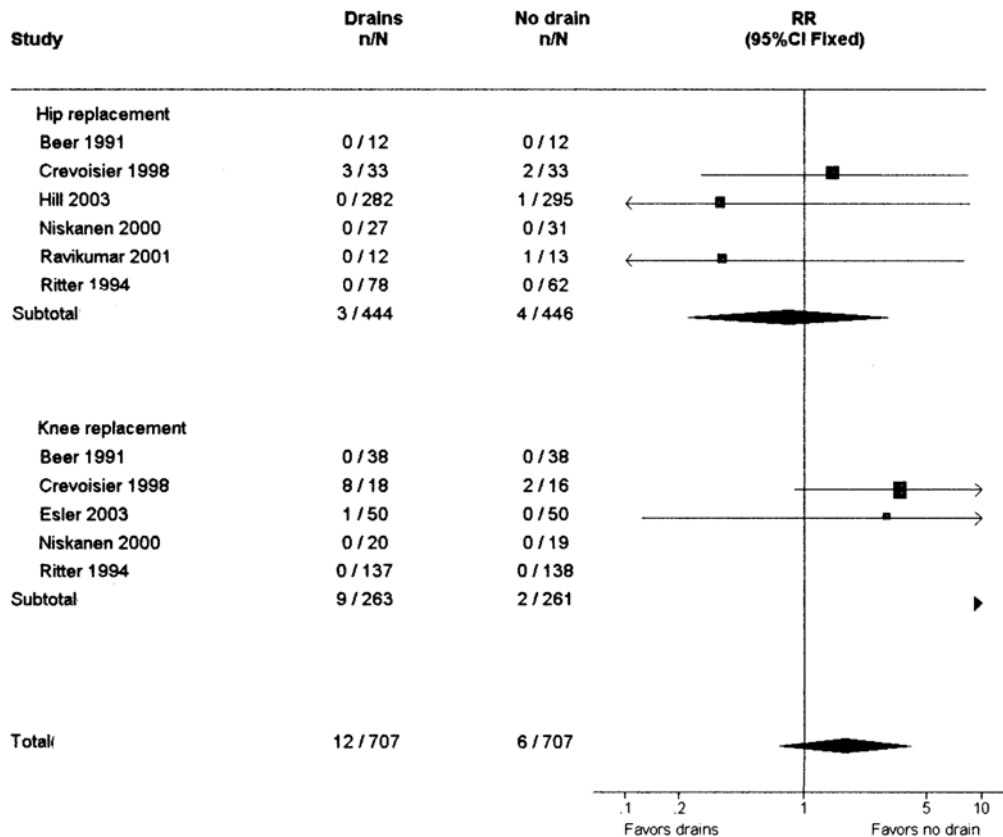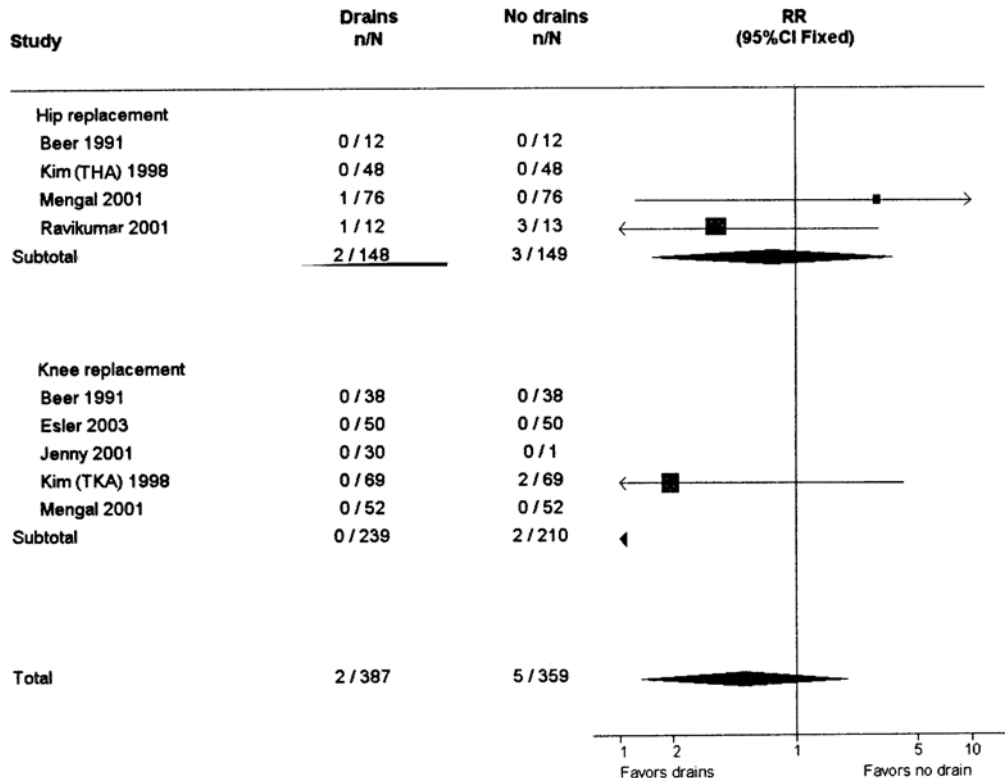
Study	Drains n/N	No drain n/N	RR (95%CI Fixed)
Hip replacement			
Beer 1991	0 / 12	0 / 12	
Crevoisier 1998	3 / 33	2 / 33	
Hill 2003	0 / 282	1 / 295	
Niskanen 2000	0 / 27	0 / 31	
Ravikumar 2001	0 / 12	1 / 13	
Ritter 1994	0 / 78	0 / 62	
Subtotal	3 / 444	4 / 446	
Knee replacement			
Beer 1991	0 / 38	0 / 38	
Crevoisier 1998	8 / 18	2 / 16	
Esler 2003	1 / 50	0 / 50	
Niskanen 2000	0 / 20	0 / 19	
Ritter 1994	0 / 137	0 / 138	
Subtotal	9 / 263	2 / 261	
Total	12 / 707	6 / 707	

.1 .2 1 5 10
Favors drains   Favors no drain

Fig. E-2

The prevalence of wound hematomas associated with the different surgical procedures with respect to the use of drains. The values are given as the number of patients with a wound hematoma/number of patients in group, with a summation of the totals and the relative risk (RR) and 95% confidence intervals (CI).
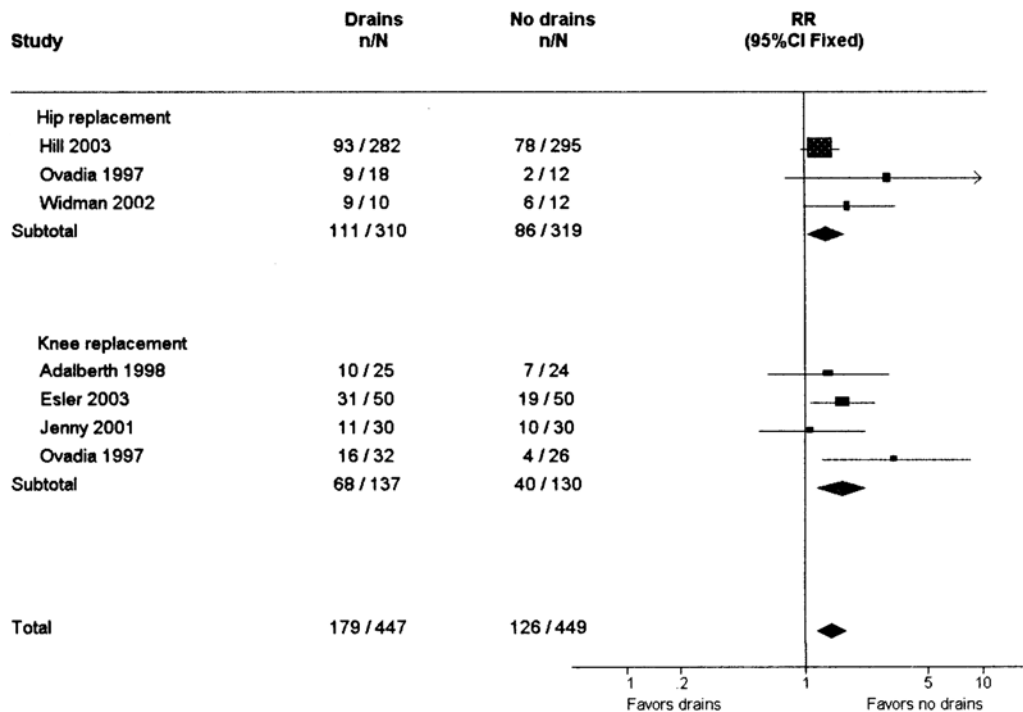
Study	Drains n/N	No drains n/N	RR (95%CI Fixed)
Hip replacement			
Beer 1991	0 / 12	0 / 12	
Kim (THA) 1998	0 / 48	0 / 48	
Mengal 2001	1 / 76	0 / 76	
Ravikumar 2001	1 / 12	3 / 13	
Subtotal	2 / 148	3 / 149	
Knee replacement			
Beer 1991	0 / 38	0 / 38	
Esler 2003	0 / 50	0 / 50	
Jenny 2001	0 / 30	0 / 1	
Kim (TKA) 1998	0 / 69	2 / 69	
Mengal 2001	0 / 52	0 / 52	
Subtotal	0 / 239	2 / 210	
Total	2 / 387	5 / 359	

Favors drains — Favors no drain

Fig. E-3

The reoperation rate for the different surgical procedures with respect to the use of drains. The values are given as the number of patients who had a reoperation/number of patients in group, with a summation of the totals and the relative risk (RR) and 95% confidence intervals (CI).

Study	Drains n/N	No drains n/N	RR (95%CI Fixed)
Hip replacement			
Hill 2003	93 / 282	78 / 295	
Ovadia 1997	9 / 18	2 / 12	
Widman 2002	9 / 10	6 / 12	
Subtotal	111 / 310	86 / 319	
Knee replacement			
Adalberth 1998	10 / 25	7 / 24	
Esler 2003	31 / 50	19 / 50	
Jenny 2001	11 / 30	10 / 30	
Ovadia 1997	16 / 32	4 / 26	
Subtotal	68 / 137	40 / 130	
Total	179 / 447	126 / 449	

Fig. E-4

The number of patients requiring transfusion. The values are given as the number of patients who had a transfusion/number of patients in group, with a summation of the totals and the relative risk (RR) and 95% confidence intervals (CI).

TABLE E-1 Methodology Scoring System

1	Was there clear concealment of allocation?
	Score 3 if allocation clearly concealed (e.g., numbered sealed opaque envelopes drawn consecutively).
	Score 2 if there was a possible chance of disclosure before allocation.
	Score 1 if the method of allocation concealment or randomization was not stated or was unclear.
	Score 0 if allocation concealment was clearly not concealed such as those using quasi-randomization (e.g., even or odd date of birth).
2	Were the inclusion and exclusion criteria clearly defined?
	Score 1 if text clearly states the types of operations involved and the types of patients included and excluded. Otherwise score 0.
3	Were the outcomes of patients who withdrew or were excluded after allocation described and included in an intention-to-treat analysis?
	Score 1 if yes or text states that no withdrawals occurred or data are presented clearly showing "participant flow," which allows this to be inferred. Otherwise score 0.
4	Were the treatment and control groups adequately described at entry and, if so, were the groups well matched for co-morbidity, or was appropriate co-variate adjustment made?
	Score 1 if at least four admission details given (e.g., age, sex, mobility, function score, mental test score) with either no important difference between groups or appropriate adjustment made. Otherwise score 0.
5	Were the care programs other than the trial options identical?
	Score 1 if text states they were or if this can be inferred. Otherwise score 0.
6	Were all the outcome measures, particularly the definition of wound infection, clearly defined in the text with a definition of any ambiguous terms encountered?
	Score 1 if yes. Otherwise score 0.
7	Were the outcome assessors blind to assignment status?
	Score 2 if assessors of wound-healing were blinded to study groups.
	Score 1 if probably blinded. Otherwise score 0.
8	Was there active follow-up of patients (review at scheduled times), as opposed to passive (simple reporting of incidents as they occurred) with a minimum follow-up of three months? Score 1 if yes. Otherwise score 0.
9	Was loss to follow-up reported with a minimum follow-up of three months? If so, were less than 5% of patients lost to follow-up?
	Score 1 if yes. Otherwise score 0.

TABLE E-2 Transfusion Details for Trials*

| Study | Operation | Transfusion requirement | | Reported |
		Drained wound	Undrained wound	P Value
Mean number of units of blood transfused for each group of patients				
Ovadia[26]	THA	13	3	0.005
Ovadia[26]	TKA	21	5	0.005
Jenny[18]	TKA	34	29	0.03
Mean number of units of blood transfused for each patient				
Adalberth[12]	TKA	0.88	0.54	–
Niskanen[24]	THA	1.8	1.8	NS
Niskanen[24]	TKA	2.3	1.4	NS
Mean volume in milliliters of blood transfused for each patient				
Ritter[28]	THA	118	93	–
Crevoisier[14]	THA	700	700	NS
Mengal[22]	THA	540	585	NS
Ritter[28]	TKA	160	157	–
Mengal[22]	TKA	275	495	'Significant'
Crevoisier[14]	TKA	280	263	NS
Holt[17]	TKA	283	278	NS

*THA = total hip arthroplasty, TKA = total knee arthroplasty, and NS = not significant.

TABLE E-3 Methodological Scores for the Studies

Score	1	2	3	4	5	6	7	8	9	Total
Hip replacement surgery										
Hill[16] 2003	2	0	0	0	1	0	0	1	0	4
Kim[20] (THA) 1998	3	1	1	1	1	1	0	1	1	10
Murphy[23] 1993	2	0	0	0	1	1	0	0	1	5
Ravikumar[27] 2001	2	1	1	0	1	1	0	0	0	6
Widman[29] 2002	2	0	0	1	0	0	0	0	0	3
Knee replacement surgery										
Adalberth[12] 1998	3	1	0	1	1	1	0	1	0	8
Esler[15] 2003	2	0	0	1	1	1	0	1	0	6
Holt[17] 1997	0	1	0	1	1	1	0	0	1	5
Jenny[18] 2001	2	0	0	0	1	1	0	1	1	6
Kim[19] (TKA) 1998	3	1	1	1	1	1	0	1	0	9
Leb[21] 1995	1	0	0	0	0	0	0	1	0	2
Ritter[28] 1994	1	1	0	0	1	1	0	0	0	4
Hip and knee replacement surgery										
Beer[13] 1991	0	0	0	1	1	1	0	1	1	5
Crevoisier[14] 1998	2	0	0	1	1	1	0	0	1	6
Mengal[22] 2001	1	1	1	1	1	1	0	0	0	6
Niskanen[24] 2000	1	1	1	0	1	1	0	0	0	5
Nixon[25] 2000	1	0	0	0	0	0	0	1	0	2
Ovadia[26] 1997	2	1	1	1	1	0	0	0	1	8