

Supplemental Table 1. Summary of medication ascertainment for cohorts participating in the Ovarian Cancer Cohort Consortium that collected information on analgesic use.

Study name (acronym) [relevant citations]*	Medication ascertained via:	Time period for question (if relevant):	Used "regularly" or "usually" and definition:	Categories of use from questionnaire (if applicable):	Description of analgesic class:			Prevalence of frequent† use			Average follow-up (max)	Average age at entry	
					aspirin	non-aspirin NSAIDs	acetaminophen (paracetamol)	aspirin	non-aspirin NSAIDs	acetaminophen (paracetamol)			N cases (events)
NIH-AARP Diet and Health Study (AARP) [21, Schatzkin et al. 2001; 18, Murphy et al. 2012]	Self-report/questionnaire	During past 12 months		If yes, <2/month, 2-3/month, 1-2/week, 3-4/week, 5-6/week, 1/day, ≥2/day	Generic aspirin, bayer, bufferin, anacin, ecotrin, or excedrin	"pain relievers" generic ibuprofen, advil, nuprin, motrin, aleve, orudis, ketoprofen, naprosyn, anaprox, feldene, piroxicam, clinoril, sulindac, indocin, indomethacin, relafen, nalfon, nambumetone, fenoprofen	(Instructed to exclude acetaminophen and tylenol (or any other pain relievers))	19.9‡	14.9‡		649	9.8 (11.2)	61.9
Breast Cancer Now (UKBGS) [22, Swerdlow et al. 2011]	Self-report/questionnaire	Did you ever	every day or almost every day for 6 months or longer		Aspirin/aspirin products	Ibuprofen containing products		5.8‡			79	5.4 (9.8)	47.5
Cancer Prevention Study II Nutrition Cohort (CPS2) [24, Jacobs et al. 2005]	Self-report/questionnaire 1992	During the past year	"regularly" not defined	Fill in times per month, pills per day, years	Aspirin/bufferin/anacin	Ibuprofen (Motrin, Advil, Nuprin, Mediprin etc)	Tylenol or other acetaminophen	14.3‡§	4.4‡§	2.8‡§	538	13.8 (16.7)	62.0
California Teachers Study (CTS) [25, Clarke et al. 2017]	Self-report/questionnaire	Have you taken	at least once a week	If yes fill in years and days per week, 1-3, 4-6, every day	Aspirin (Anacin, Bufferin, Excedrin)	Ibuprofen (Advil, Motrin, Nuprin)	Acetaminophen (Tylenol, panadol, aspirin free excedrin, etc)	9.8‡§	7.9‡§	3.1‡§	185	14.3 (15.2)	51.8
Iowa Women's Health Study (IWHs) [17, Prizment et al. 2010]	Self-report/questionnaire	How often do you		Never, <1/week, 1/week, 2-5/week, 6+/week	Aspirin (bufferin, acnacin, entericoated aspirin, ecotrin, and excedrin)	Other nonsteroidal antiinflammatory drugs or arthritis medications (ibuprofen, advil, nuprin, motrin, naprosyn, feldene, clinoril)	*Instructed to exclude acetaminophen and tylenol	38.0‡§	19.9‡§		222	14.0 (16.2)	68.2
Multiethnic/Minority Cohort Study (MEC) [26, Setiawan et al. 2012; 27, Kolonel et al. 2000]	Self-report/questionnaire	Have you ever taken	at least two times per week (for one month or longer)	Also captured years of use	Aspirin (Anacin, Bayer, Bufferin, Excedrin, or other)	Other pain relief medication (motrin, nuprin, advil, naprosyn, medipren, ibuprofen, or other)	Acetaminophen (Tylenol, anacin-3, panadol, other)	38.8§	32.7§	28.9§	62	10.3 (18.9)	57.7
Nurses' Health Study - 1980 (NHS80) [16, Pinheiro et al. 2009]	Self-report/questionnaire	Current use	most weeks	Write in number/week and years of use	Aspirin (includes Bufferin, Anacin, etc.)	Other non-steroidal analgesics (Circle: Motrin/indocin/Tolectin/Clinoril)		35.1			346	15.5 (16.0)	46.3
Nurses' Health Study - 2000 (NHS00) [16, Pinheiro et al. 2009]	Self-report/questionnaire	If used regularly in past 2 years	at least 2 times per week	Days/week: 1, 2-3, 4-5, 6+; Tablets/week: 1-2, 3-5, 6-14, 15+ tablets	"Baby" or low dose aspirin; Aspirin or aspirin-containing products (325mg/tablet or more)	Ibuprofen (e.g., Advil, Motrin, Nuprin)	Acetaminophen (e.g., Tylenol)	35.8‡§	13.7‡§	11.7‡§	339	9.2 (10.0)	65.8
Nurses' Health Study II - 2001(NHSII01) [16, Pinheiro et al. 2009]	Self-report/questionnaire	If used regularly in past 2 years	at least 2 times per week	Days/week: 1, 2-3, 4-5, 6+; Tablets/week: 1-2, 3-5, 6-14, 15+ tablets	"Baby" or low dose aspirin; Aspirin or aspirin-containing products (325mg/tablet or more)	Ibuprofen (e.g., Advil, Motrin, Nuprin)	Acetaminophen (e.g., Tylenol)	10.9‡§	10.2‡§	4.4‡§	137	9.7 (10.0)	46.0
Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial (PLCO) [29, Prorok et al. 2000]	Self-report/questionnaire	During the last 12 months, have you regularly	"regularly" not defined	1 per day, 2+ per day, 1 per week, 2 per week, 3-4 per week, less than 2 per month, 2-3 per month	Aspirin, aspirin-containing product	Ibuprofen containing products such as Advil, Nuprin, Motrin		29.3‡	17.7		363	11.9 (17.0)	62.5
Swedish Mammography Cohort (SMC) [30, Larsson et al. 2004]	Self-report/questionnaire	Have you regularly taken	at least one tablet per week	At least 1 tab/week, captured tab/week and year first used	Aspirin (megnecyl, bamy, dispril, aspirin, alka-seltzer, treo, albyl, bamygor, trombyl)	Indometacin (indomee, confortid, indometacin)	Paracetamol (alvedon, panodil, citadon, curadon, distalgesic, lemsip, panocod, reliv)	6.6‡§	0.9	6.7‡§	148	13.3 (15.0)	61.3
Sister Study (SS) [31, Kim et al. 2015]	Self-reported/diary-based, interview assisted, brought medications to interview	Do you currently take any non-prescription medications? Also captured information in a grid-format to ascertain lifetime medication usage.	at least once a week	(Fill in name of meds), at least once per week, captures days per week, times per day, years and months, also section on pain meds that requires use of at least 3 times per week for three months in a row or longer				20.6‡§	22.9‡§	9.5‡§	39	4.6 (8.1)	54.7
Vitamins and Lifestyle Cohort (VITAL) [32, Ready et al. 2008]	Self-report/questionnaire	In the past 10 years did you take any	at least once a week for a year	Captured low dose or regular/extra strength, years 1-3, 4-8, 9-10; days/week 1-3, 4-6, 7	Aspirin (anacin, buffering, alka-seltzer, bayer, excedrin)	Ibuprofen (Advil, Motrin, Nuprin or mediprin), also includes naproxen, celebrex, other pain medications	Acetaminophen (tylenol or aspirin-free excedrin)	25.5‡§	18.1‡§	8.3‡§	128	9.4 (11.2)	61.3
Women's Health Initiative (WHI) - Observational Study cohort [33, Langer et al. 2003; 34, Design 1998; 19, Brasky et al. 2014]	Self-reported/computer assisted, brought meds to interview	Used regularly over the previous 2 weeks	at least 2 times per week	Captured duration of analgesic use and low dose aspirin use				38.7§	27.8§	15.1§	279	12.0 (18.9)	64.0
Cohorts with information on analgesic use, but with limited/no information on frequency and/or duration of use													
Campaign Against Cancer and Stroke (CLUEII) [23, Gallicchio et al. 2007]	Self-report/questionnaire	Current at blood draw											
Netherlands Cohort Study on Diet and Cancer (NLCS) [28, Braem et al. 2010]	Self-report/questionnaire	Used longer than 6 months											
Women's Lifestyle and Health Study (WLHS) [35, Roswall et al. 2017]	From prescription registry, identification based on recorded ATC codes. Analyses are left truncated, since the prescription registry was established recently.	Any recent use											

*For additional information on the cohorts included in OC3 please see (4, Wentzensen et al. 2016)

†Frequent: use at least ~4-5 days/week for 6 months or longer

‡ Study had sufficient information on daily frequency of medication use

§ Study had sufficient information on duration of medication use

|| Study had sufficient information on dose of aspirin use

Supplementary Table 2. Associations between analgesic use and ovarian carcinoma stratified by age at baseline, Ovarian Cancer Cohort Consortium.

Analgesic use	Age at baseline														
	Overall			<50			50-59			60-69			70+		
	HR	(95% CI)	n events	HR	(95% CI)	n events	HR	(95% CI)	n events	HR	(95% CI)	n events	HR	(95% CI)	n events
Aspirin															
Infrequent/Non-use	1.00 ref		268	1.00 ref		746	1.00 ref		923	1.00 ref		250	1.00 ref		0.25
Frequent use*	0.95 (0.88-1.03)		72	0.92 (0.70-1.22)		227	0.99 (0.85-1.16)		324	0.95 (0.83-1.09)		147	0.96 (0.77-1.19)		
Infrequent/Non-use	1.00 ref		248	1.00 ref		476	1.00 ref		448	1.00 ref		183	1.00 ref		0.69
Frequent 0.5-<5 yr dur	0.91 (0.83-1.00)		36	0.93 (0.65-1.35)		66	0.92 (0.70-1.20)		71	0.91 (0.70-1.19)		49	0.95 (0.68-1.33)		
Frequent 5-10 yr dur	0.89 (0.71-1.10)		7	0.56 (0.25-1.26)		26	1.05 (0.71-1.56)		28	0.89 (0.59-1.33)		27	1.00 (0.65-1.55)		
Frequent >10 yr dur	1.15 (0.98-1.34)		29	1.08 (0.73-1.61)		60	1.15 (0.87-1.53)		57	1.12 (0.82-1.52)		44	1.09 (0.74-1.60)		
Infrequent/Non-use	1.00 ref		135	1.00 ref		569	1.00 ref		837	1.00 ref		205	1.00 ref		0.73
frequent, <daily use	1.02 (0.91-1.15)		3	0.74 (0.24-2.33)		41	0.99 (0.71-1.37)		79	1.15 (0.90-1.46)		21	0.98 (0.60-1.61)		
Daily use†	0.90 (0.81-1.00)		10	0.89 (0.43-1.84)		90	0.92 (0.73-1.17)		199	0.88 (0.75-1.04)		100	1.05 (0.82-1.36)		
Non-aspirin NSAID															
Infrequent/Non-regular	1.00 ref		124	1.00 ref		620	1.00 ref		1008	1.00 ref		330	1.00 ref		0.54
Frequent use*	1.00 (0.90-1.11)		16	0.85 (0.51-1.41)		123	1.09 (0.89-1.33)		188	1.06 (0.90-1.24)		51	0.80 (0.58-1.10)		
Infrequent/Non-use	1.00 ref		118	1.00 ref		301	1.00 ref		455	1.00 ref		241	1.00 ref		0.40
Frequent 0.5-<5 yr dur	0.97 (0.86-1.09)		6	0.58 (0.27-1.26)		32	0.95 (0.65-1.38)		55	1.22 (0.90-1.65)		15	0.50 (0.28-0.88)		
Frequent 5-10 yr dur	1.09 (0.84-1.41)		6	1.16 (0.51-2.68)		17	1.13 (0.68-1.86)		26	1.47 (0.97-2.22)		12	0.84 (0.45-1.54)		
Frequent >10 yr dur	1.20 (0.86-1.69)		4	1.13 (0.41-3.16)		12	1.62 (0.86-3.03)		12	1.35 (0.76-2.39)		7	1.05 (0.46-2.38)		
Infrequent/Non-use	1.00 ref		113	1.00 ref		508	1.00 ref		899	1.00 ref		260	1.00 ref		0.47
frequent, <daily use	1.03 (0.88-1.20)		8	1.11 (0.54-2.31)		39	1.33 (0.96-1.85)		43	1.04 (0.76-1.43)		9	0.82 (0.40-1.66)		
Daily use†	0.98 (0.85-1.12)		2	0.25 (0.06-0.99)		59	0.99 (0.76-1.31)		112	1.02 (0.83-1.25)		31	0.90 (0.61-1.34)		
Acetaminophen															
Infrequent/Non-regular	1.00 ref		131	1.00 ref		410	1.00 ref		559	1.00 ref		259	1.00 ref		0.14
Frequent use*	1.05 (0.88-1.25)		5	0.53 (0.21-1.34)		38	1.10 (0.78-1.54)		52	0.98 (0.72-1.33)		45	1.32 (0.94-1.84)		
Infrequent/Non-use	1.00 ref		121	1.00 ref		395	1.00 ref		551	1.00 ref		257	1.00 ref		0.52
Frequent 0.5-<5 yr dur	0.99 (0.76-1.29)		1	0.27 (0.04-2.10)		14	0.99 (0.58-1.71)		22	0.96 (0.61-1.50)		15	0.90 (0.51-1.58)		
Frequent 5-10 yr dur	1.16 (0.87-1.54)		2	1.04 (0.26-4.24)		10	1.04 (0.56-1.96)		17	1.01 (0.60-1.70)		18	1.60 (0.98-2.61)		
Frequent >10 yr dur	1.01 (0.73-1.41)		1	0.34 (0.05-2.35)		13	1.36 (0.77-2.38)		12	0.97 (0.54-1.73)		11	1.65 (0.89-3.06)		
Infrequent/Non-use	1.00 ref		122	1.00 ref		350	1.00 ref		465	1.00 ref		207	1.00 ref		<0.001
frequent, <daily use	0.91 (0.72-1.14)		0	--		9	0.99 (0.51-1.94)		16	1.28 (0.77-2.14)		6	0.70 (0.31-1.57)		
Daily use†	1.29 (1.00-1.67)		3	1.06 (0.33-3.43)		14	1.19 (0.70-2.04)		22	1.00 (0.63-1.58)		28	1.78 (1.17-2.72)		

*Frequent: use at least ~4-5 days/week for 6 months or longer

†Daily: use at least ~6-7 days/week or ≥28 days per month for 6 months or longer

‡ P value for interaction calculated using a two-sided likelihood ratio test.

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