Supplementary Table SI. MOOSE Reporting Checklist for Authors, Editors, and Reviewers of Meta-analyses of Observational Studies

Reporting of background should include:	**Page number:**
Problem definition	5
Hypothesis statement	5
Description of study outcome(s)	5
Type of exposure or intervention used	5
Type of study designs used	5
Study population	5
Reporting of search strategy should include:	**Page number:**
Qualifications of searchers (eg, librarians and investigators)	1
Search strategy, including time period included in the synthesis and keywords Effort to include all available studies, including contact with authors Databases and registries searched	Appendix 1 6-7 6-7
Search software used, name and version, including special features used (eg, explosion) Use of hand searching (eg, reference lists of obtained articles)	6-7 6-7
List of citations located and those excluded, including justification Method of addressing articles published in languages other than English Method of handling abstracts and unpublished studies	Figure 1 - 6-7
Description of any contact with authors	-
Reporting of methods should include:	**Page number:**

Description of relevance or appropriateness of studies assembled for assessing the hypothesis to be tested	6-7
Rationale for the selection and coding of data (eg, sound clinical principles or convenience)	6-7
Documentation of how data were classified and coded (eg, multiple raters, blinding, and interrater reliability)	6-7
Assessment of confounding (eg, comparability of cases and controls in studies where appropriate)	6-7
Assessment of study quality, including blinding of quality assessors; stratification or regression on possible predictors of study results	6-7
Assessment of heterogeneity	6-7
Description of statistical methods (eg, complete description of fixed or random effects models, justification of whether the chosen models account for predictors of study results, dose-response models, or cumulative meta-analysis) in sufficient detail to be replicated	6-7
Provision of appropriate tables and graphics	Tables and Figures
Reporting of results should include:	**Page number:**
Graphic summarizing individual study estimates and overall estimate	Figures
Table giving descriptive information for each study included	Table
Results of sensitivity testing (eg, subgroup analysis)	8-12
Indication of statistical uncertainty of findings	8-12
Reporting of discussion should include:	**Page number:**
Quantitative assessment of bias (eg, publication bias)	13-16
Justification for exclusion (eg, exclusion of non–English-language citations)	-
Assessment of quality of included studies	13-16
Reporting of conclusions should include:	**Page number:**
Consideration of alternative explanations for observed results	16-17
Generalization of the conclusions (ie, appropriate for the data presented and within the domain of the literature review)	16-17
Guidelines for future research	-
Disclosure of funding source	17

Supplementary Table SII. Full search terms and strategy for papers indexed in PUBMED.		
No	**Concept**	**Search terms**
1	**Stroke**	cerebrovascular[tiab] OR stroke[tiab] OR TIA[tiab] OR transient ischemic*[tiab] OR CVA[tiab] OR cerebral infarction[tiab] OR Cerebrovascular accident [Mesh:NoExp] OR stroke[Mesh:NoExp]
2	**Sleep duration**	sleep duration [tiab]
3	**Combination Exposure And Outcome**	#1 AND #2
4	**Limit**	Rats[Mesh:NoExp]) OR Mice[Mesh:NoExp]) OR rat[Title/Abstract]) OR rats[Title/Abstract]) OR mouse[Title/Abstract]) OR mice[Title/Abstract]) OR vivo[Title/Abstract]) OR vitro[Title/Abstract])
5	**Limit**	#3 NOT #4

NEWCASTLE – OTTAWA QUALITY ASSESSMENT SCALE - COHORT STUDIES

Note: A study can be awarded a maximum of one star for each numbered item within the Selection and Outcome categories. A maximum of two stars can be given for Comparability.

Selection

1) Representativeness of the exposed cohort

a) truly representative of the average *healthy adults* in the community★

b) somewhat representative of the average *healthy adults* in the community ★

c) selected group of users *e.g. nurses, volunteers, vegetarian*

d) no description of the derivation of the cohort

2) Selection of the non-exposed cohort

a) drawn from the same community as the exposed cohort★

b) drawn from a different source

c) no description of the derivation of the non-exposed cohort

3) Ascertainment of exposure

a) secure record (*e.g. 7 day food diary)* ★

b) structured interview/≥ 2 *dietary recalls/diet history/ food frequency questionnaire validated for dairy components* ★

c) written self-report (*e.g. <2 dietary recalls/non-validated food frequency questionnaire or not reported whether food frequency questionnaire was validated*)

d) no description

4) Demonstration that outcome of interest was not present at start of study

a) yes★

b) no

Comparability

1) Comparability of cohorts on the basis of the design or analysis

a) study controls for *age, sex, smoking, total energy intake, and body mass index*★

b) study controls for any additional factor (*e.g. physical activity, alcohol intake, family history of diabetes, dietary factors*) ★

Outcome

1) Assessment of outcome

a) independent blind assessment (e.g. clinical diagnosis/complete medical information available).★

b) record linkage/*medical record or validated self-report* ★
c) non-validated self-report
d) no description
2) Was follow-up long enough for outcomes to occur
a) yes/ *follow up period for outcome of interest is 10 years or over* ★
b) no
3) Adequacy of follow-up of cohorts
a) complete follow-up - all subjects accounted for ★
b) subjects lost to follow-up unlikely to introduce bias - small number lost ≤*20%* follow-up, or description provided of those lost ★
c) follow-up rate <*80%* or no description of those lost
d) no statement

Supplemental Table SIII. Quality assessment of selected cohorts studies.

Studies	Selection				Comparability	Outcome			Total score
	Representativeness of the exposed cohort	Selection of the non-exposed cohort	Ascertainment of exposure	Outcome not present at start of study	Comparability of cohorts on the basis of the design or analysis	Assessment of outcome	Follow-up long enough for outcomes to occur	Adequacy of follow-up of cohorts	
Chen, 2008 (1)	C	A★	B★	A★	A★ B★	B★	B	B★	9
Hamazaki, 2011 (2)	C	A★	B★	A★	A★ B★	B★	A★	B★	8
Helbig, 2015 (3)	C	A★	B★	A★	A★ B★	B★	A★	B★	8
Leng, 2015	C	A★	B★	A★	A★ B★	B★	B	B★	9

(4)									
Magee, 2011 (5)	C	A★	B★	A★	A★ B★	B★	A★	B★	8
Qureshi, 1997 (6)	C	A★	B★	A★	A★ B★	B★	A★	B★	8
Ruiter Petrov, (7)2014	C	A★	B★	A★	A★ B★	B★	A★	B★	8
Song, 2016 (8)	B★	A★	C	A★	A★ B★	B★	A★	C	7
Tu, 2012 (9)	C	A★	B★	A★	A★ B★	B★	B	B★	9
Von Ruesten, 2012 (10)	B★	A★	C	A★	A★ B★	B★	A★	C	7
Amagai, 2010 (11)	C	A★	B★	A★	A★ B★	B★	B	B★	9
Westerlund, 2013(12)	C	A★	B★	A★	A★ B★	B★	A★	B★	8

References:

1. Chen J-C, Brunner RL, Ren H, Wassertheil-Smoller S, Larson JC, Levine DW, et al. Sleep duration and risk of ischemic stroke in postmenopausal women. Stroke; a journal of cerebral circulation. 2008;39(12):3185.
2. Hamazaki Y, Morikawa Y, Nakamura K, Sakurai M, Miura K, Ishizaki M, et al. The effects of sleep duration on the incidence of cardiovascular events among middle-aged male workers in Japan. Scandinavian journal of work, environment & health. 2011:411-7.
3. Helbig AK, Stöckl D, Heier M, Ladwig K-H, Meisinger C. Symptoms of insomnia and sleep duration and their association with incident strokes: findings from the population-based MONICA/KORA Augsburg Cohort Study. PLoS One. 2015;10(7):e0134480.
4. Leng Y, Cappuccio FP, Wainwright NW, Surtees PG, Luben R, Brayne C, et al. Sleep duration and risk of fatal and nonfatal stroke: a prospective study and meta-analysis. Neurology. 2015;84(11):1072-9.
5. Magee CA, Kritharides L, Attia J, McElduff P, Banks E. Short and long sleep duration are associated with prevalent cardiovascular disease in Australian adults. Journal of sleep research. 2012;21(4):441-7.
6. Qureshi AI, Giles WH, Croft JB, Bliwise DL. Habitual sleep patterns and risk for stroke and coronary heart disease: a 10-year follow-up from NHANES I. Neurology. 1997;48(4):904-10.
7. Petrov MER, Letter AJ, Howard VJ, Kleindorfer D. Self-reported sleep duration in relation to incident stroke symptoms: nuances by body mass and race from the REGARDS study. Journal of Stroke and Cerebrovascular Diseases. 2014;23(2):e123-e32.
8. Song Q, Liu X, Zhou W, Wang L, Zheng X, Wang X, et al. Long sleep duration and risk of ischemic stroke and hemorrhagic stroke: the Kailuan Prospective Study. Scientific reports. 2016;6:33664.
9. Tu X, Cai H, Gao Y-T, Wu X, Ji B-T, Yang G, et al. Sleep duration and its correlates in middle-aged and elderly Chinese women: the Shanghai Women's Health Study. Sleep medicine. 2012;13(9):1138-45.
10. Von Ruesten A, Weikert C, Fietze I, Boeing H. Association of sleep duration with chronic diseases in the European Prospective Investigation into Cancer and Nutrition (EPIC)-Potsdam study. PloS one. 2012;7(1):e30972.
11. Amagai Y, Ishikawa S, Gotoh T, Kayaba K, Nakamura Y, Kajii E. Sleep duration and incidence of cardiovascular events in a Japanese population: the Jichi Medical School cohort study. Journal of epidemiology. 2010:0912090122-.
12. Westerlund A, Bellocco R, Sundström J, Adami H-O, Åkerstedt T, Lagerros YT. Sleep characteristics and cardiovascular events in a large Swedish cohort. European journal of epidemiology. 2013;28(6):463-73.

Supplementary Table SIV. Summary results of the genetic loci of self-reported or derived by accelerometer sleep duration

SNP	GX	GX SE	EA	OA	EAF
Self-reported sleep duration					
rs915416	0.019259	0.002495	C	G	0.289947
rs269054	-0.01364	0.002293	T	A	0.577924
rs12567114	-0.01483	0.00254	G	A	0.724198
rs62120041	0.026111	0.004575	T	C	0.933902
rs374153	0.017612	0.003103	C	T	0.158085
rs75539574	-0.03625	0.004065	A	C	0.914208
rs7556815	-0.04072	0.00274	G	A	0.780856
rs12611523	0.012635	0.002276	A	G	0.545244
rs4538155	-0.01298	0.002374	C	T	0.352574
rs10173260	-0.01284	0.002313	T	C	0.393765
rs112230981	0.031528	0.005228	A	G	0.94984
rs17732997	0.012935	0.002288	C	G	0.569098
rs7644809	0.013062	0.002301	T	C	0.421606
rs13088093	-0.01627	0.002402	T	G	0.663683
rs2192528	0.013369	0.002269	A	G	0.480065
rs17427571	0.013826	0.002435	A	G	0.684313
rs35531607	-0.01284	0.002273	T	C	0.525917
rs13109404	0.031204	0.004408	T	G	0.928024
rs365663	0.014629	0.002279	A	G	0.545963
rs56372231	-0.01694	0.0024	C	T	0.665907
rs180769	0.012724	0.002294	T	C	0.424698
rs151014368	-0.01609	0.00282	G	A	0.793742
rs34556183	0.016923	0.002523	A	G	0.719606
rs80193650	-0.01684	0.003067	A	G	0.837534

rs9382445	0.014536	0.002334	T	C	0.62305
rs2231265	-0.01496	0.002699	A	G	0.227711
rs34731055	-0.01946	0.002948	C	T	0.81911
rs2079070	0.017548	0.002566	C	G	0.264613
rs7806045	0.014792	0.002626	T	C	0.754703
rs330088	-0.01447	0.002277	T	C	0.452988
rs10973207	-0.02043	0.003124	G	T	0.842323
rs1776776	0.019963	0.003411	T	C	0.873832
rs12246842	0.013395	0.002274	A	G	0.459815
rs10761674	0.012333	0.002266	C	T	0.477334
rs11190970	0.015379	0.002823	G	A	0.798661
rs7915425	0.019064	0.00299	T	C	0.174682
rs1517572	-0.01464	0.002295	A	C	0.419464
rs4592416	-0.01468	0.00227	A	G	0.535593
rs174560	-0.01358	0.002437	T	C	0.685785
rs12791153	-0.02355	0.004217	A	T	0.918911
rs1939455	0.020425	0.003561	G	T	0.879446
rs1263056	0.012799	0.002277	A	G	0.519099
rs34354917	0.013746	0.002501	C	A	0.710472
rs11614986	0.016379	0.002951	A	G	0.820952
rs6575005	0.015564	0.002642	T	C	0.757854
rs61985058	-0.01859	0.003229	C	T	0.856824
rs11621908	0.024095	0.004163	C	T	0.917141
rs8038326	0.01592	0.002541	A	G	0.72691
rs3095508	0.015352	0.002304	C	A	0.593529
rs11643715	-0.0139	0.002497	C	G	0.709058
rs9940646	0.016946	0.002291	C	G	0.577569
rs7503199	0.014745	0.002564	C	T	0.734267
rs1991556	0.016566	0.002724	G	A	0.773765

rs12607679	0.020139	0.002593	T	C	0.737717
rs10421649	-0.0133	0.002295	T	A	0.44303
rs2072727	0.013243	0.002285	T	C	0.43617
Accelerometer derived sleep duration					
rs2660302	0.041	0.006	A	T	0.811
rs113851554	0.11	0.011	G	T	0.943
rs62158170	0.054	0.006	G	A	0.217
rs17400325	0.066	0.012	T	C	0.958
rs72828540	0.041	0.005	T	C	0.752
rs9369062	0.033	0.005	C	A	0.292
rs2975734	0.027	0.005	C	G	0.561
rs13282541	0.032	0.005	C	T	0.739
rs2880370	0.028	0.005	A	T	0.67
rs800165	0.028	0.005	T	T	0.343
rs10138240	0.029	0.005	G	G	0.514
Short Sleep					
rs7524118	-0.00576	0.001054	T	C	0.291624
rs2186122	-0.00567	0.000972	A	T	0.438434
rs12567114	0.006325	0.001077	G	A	0.7246
rs2820313	-0.00601	0.00101	A	G	0.658888
rs1380703	-0.00676	0.001005	A	G	0.616469
rs2863957	0.01019	0.001161	C	A	0.781508
rs2014830	0.005786	0.00105	C	T	0.698128
rs17005118	-0.00648	0.001087	G	A	0.735064
rs13107325	-0.01327	0.001828	C	T	0.925472
rs12518468	-0.00589	0.001021	T	C	0.671544
rs3776864	0.005724	0.001019	A	C	0.66721
rs4585442	-0.00635	0.001036	A	G	0.688977
rs12661667	-0.00602	0.001087	C	T	0.736505

rs9367621	0.005445	0.00097	T	A	0.43104
rs9321171	0.005354	0.000966	C	T	0.540122
rs11763750	0.007212	0.001234	G	A	0.814346
rs1229762	-0.00724	0.001017	C	T	0.335499
rs60882754	0.011304	0.002001	A	T	0.938985
rs1607227	0.006369	0.001055	G	T	0.704938
rs7939345	0.006498	0.001182	T	G	0.207569
rs17388803	-0.00983	0.001587	A	C	0.894352
rs59779556	0.005491	0.000966	T	G	0.553827
rs205024	0.00551	0.000986	C	T	0.616724
rs12963463	0.007114	0.00106	C	T	0.299425
rs5757675	0.006455	0.001099	G	T	0.259528
Long Sleep					
rs10899255	-0.00562	0.001032	G	A	0.855558
rs149980149	-0.01192	0.002226	C	G	0.971827
rs5848	0.004465	0.00082	C	T	0.721799
rs62158160	-0.00501	0.00083	C	T	0.742431
rs72630583	-0.0047	0.000882	C	T	0.783789
rs73608603	-0.00598	0.001073	A	G	0.867766
rs75458655	-0.01673	0.002423	C	T	0.977027
rs8047395	0.003957	0.000728	G	A	0.50028

EA: effect allele; OA: other allele, EAF: effect allele frequency; GX: the per-allele effect on standard deviation units of the telomere length; GX SE: standard error of GX.