

**Supplementary Table A1: Full search strategy, Medline, December 2014**

#	Searches	Records found
1	(("norovirus"[MeSH Terms] OR "norovirus"[All Fields]) AND (histo[All Fields] AND ("blood group antigens"[MeSH Terms] OR ("blood"[All Fields] AND "group"[All Fields] AND "antigens"[All Fields]) OR "blood group antigens"[All Fields] OR ("blood"[All Fields] AND "group"[All Fields]) OR "blood group"[All Fields]))) AND secretor[All Fields]	35
2	(("rotavirus"[MeSH Terms] OR "rotavirus"[All Fields]) AND (histo[All Fields] AND ("blood group antigens"[MeSH Terms] OR ("blood"[All Fields] AND "group"[All Fields] AND "antigens"[All Fields]) OR "blood group antigens"[All Fields] OR ("blood"[All Fields] AND "group"[All Fields]) OR "blood group"[All Fields]))) AND secretor[All Fields]	6
3	("rotavirus"[MeSH Terms] OR "rotavirus"[All Fields]) AND HBGA[All Fields] AND secretor[All Fields]	4
4	("norovirus"[MeSH Terms] OR "norovirus"[All Fields]) AND HBGA[All Fields] AND secretor[All Fields]	18
5	("norovirus"[MeSH Terms] OR "norovirus"[All Fields]) AND FUT2[All Fields]	25
	Total	88

**Table A2: Studies included in norovirus meta-analysis**

<b>Author, Year [Ref #]</b>	<b>Setting</b>	<b>Country</b>	<b>Cases</b>	<b>Controls</b>
<b>Challenge studies</b>				
Frenck, 2012 [1]	Challenge Study	USA	Infected challenge subjects	Uninfected challenge subjects
Hutson, 2002 [2]	Challenge Study	USA	Infected challenge subjects	Uninfected challenge subjects
Hutson, 2005 [3]	Challenge Study	USA	Infected challenge subjects	Uninfected challenge subjects
Lindesmith, 2003 [4]	Challenge Study	USA	Infected challenge subjects	Uninfected challenge subjects
Lindesmith, 2005 [5]	Challenge Study	USA	Infected challenge subjects	Uninfected challenge subjects
<b>Outbreak studies</b>				
Carlsson, 2009 [6]	Nursing Home	Spain	Symptomatic individuals in outbreak	Asymptomatic/unexposed individuals in outbreak
Hennessy, 2003 [7]	Inpatient	Afghanistan	Symptomatic individuals in outbreak	Asymptomatic individuals in outbreak
Jin, 2013 [8]	Community	China	Symptomatic individuals in outbreak	Asymptomatic individuals in outbreak
Kindberg, 2007 [9]	Community, inpatient	Denmark	Symptomatic individuals in outbreak	Asymptomatic/unexposed individuals in outbreak
Le Guyader, 2010 [10]	Community	France	Symptomatic individuals in outbreak	Asymptomatic individuals in outbreak
Nordgren, 2010 [11]	Community	Sweden	Symptomatic individuals in outbreak	Asymptomatic/unexposed individuals in outbreak
Rockx, 2005 [12]	Community	Netherlands	Infected/symptomatic individuals in outbreak	Uninfected individuals in outbreak
Tan, 2008 [13]	Community	China	Symptomatic individuals in outbreak	Asymptomatic/unexposed individuals in outbreak
Thorven, 2005 [14]	Inpatient	Sweden	Infected/symptomatic individuals in outbreak	Asymptomatic individuals in outbreak
<b>Endemic studies</b>				
Bucardo, 2009 [15]	Inpatient, outpatient	Nicaragua	Norovirus positive individuals	Healthy population controls
Currier, 2015 [16]	Inpatient, outpatient	USA	Norovirus positive individuals	Healthy population controls

Liu, 2014 [17]	Inpatient	China	Norovirus positive individuals with acute gastroenteritis	Norovirus negative individuals with acute gastroenteritis
Lopman, 2014 [18]	Community birth cohort	Ecuador	First norovirus infection of children in cohort	Uninfected children in cohort
Nordgren, 2013 [19]	Inpatient, outpatient	Burkina Faso	Norovirus positive individuals with acute gastroenteritis	Norovirus negative individuals with acute gastroenteritis
Van Trang, 2014 [20]	Inpatient	Vietnam	Norovirus positive individuals with acute gastroenteritis	Norovirus negative individuals with acute gastroenteritis

---

**Supplementary Table A3: Studies included in rotavirus meta-analysis**

<b>Author, Year [Ref #]</b>	<b>Setting</b>	<b>Country</b>	<b>Cases</b>	<b>Controls</b>
Imbert-Marcille, 2014 [21]	Inpatient, outpatient	France	Rotavirus positive individuals with acute gastroenteritis	Healthy population controls; rotavirus negative individuals with acute gastroenteritis
Nordgren, 2014 [22]	Inpatient, outpatient, community	Burkina Faso, Nicaragua	Rotavirus positive individuals with acute gastroenteritis	Rotavirus negative individuals with acute gastroenteritis
Payne, 2015 [23]	Inpatient, outpatient	United States	Rotavirus positive individuals	Healthy population controls
Van Trang, 2014 [20]	Inpatient	Vietnam	Rotavirus positive individuals with acute gastroenteritis	Rotavirus negative individuals with acute gastroenteritis

## Supplementary References

1. Frenck R, Bernstein DI, Xia M, et al. Predicting susceptibility to norovirus GII.4 by use of a challenge model involving humans. *J Infect Dis* **2012**; 206(9): 1386-93.
2. Hutson AM, Atmar RL, Graham DY, Estes MK. Norwalk Virus Infection and Disease Is Associated with ABO Histo-Blood Group Type. *J Infect Dis* **2002**; 185(9): 1335-7.
3. Hutson AM, Airaud F, LePendou J, Estes MK, Atmar RL. Norwalk virus infection associates with secretor status genotyped from sera. *J Med Virol* **2005**; 77(1): 116-20.
4. Lindesmith L, Moe C, Marionneau S, et al. Human susceptibility and resistance to Norwalk virus infection. *Nat Med* **2003**; 9(5): 548-53.
5. Lindesmith L, Moe C, LePendou J, Frelinger JA, Treanor J, Baric RS. Cellular and humoral immunity following Snow Mountain virus challenge. *J Virol* **2005**; 79(5): 2900-9.
6. Carlsson B, Kindberg E, Buesa J, et al. The G428A nonsense mutation in FUT2 provides strong but not absolute protection against symptomatic GII.4 Norovirus infection. *PLOS One* **2009**; 4(5): e5593.
7. Hennessy EP, Green AD, Connor MP, Darby R, MacDonald P. Norwalk Virus Infection and Disease Is Associated with ABO Histo-Blood Group Type. *J Infect Dis* **2003**; 188(1): 176-7.
8. Jin M, He Y, Li H, et al. Two gastroenteritis outbreaks caused by GII Noroviruses: host susceptibility and HBGA phenotypes. *PLOS One* **2013**; 8(3): e58605.
9. Kindberg E, Akerlind B, Johnsen C, et al. Host genetic resistance to symptomatic norovirus (GGII.4) infections in Denmark. *J Clin Microbiol* **2007**; 45(8): 2720-2.
10. Le Guyader FS, Krol J, Ambert-Balay K, et al. Comprehensive analysis of a norovirus-associated gastroenteritis outbreak, from the environment to the consumer. *J Clin Microbiol* **2010**; 48(3): 915-20.

11. Nordgren J, Kindberg E, Lindgren PE, Matussek A, Svensson L. Norovirus gastroenteritis outbreak with a secretor-independent susceptibility pattern, Sweden. *Emerg Infect Dis* **2010**; 16(1): 81-7.
12. Rockx BH, Vennema H, Hoebe CJ, Duizer E, Koopmans MP. Association of histo-blood group antigens and susceptibility to norovirus infections. *J Infect Dis* **2005**; 191(5): 749-54.
13. Tan M, Jin M, Xie H, Duan Z, Jiang X, Fang Z. Outbreak studies of a GII-3 and a GII-4 norovirus revealed an association between HBGA phenotypes and viral infection. *J Med Virol* **2008**; 80(7): 1296-301.
14. Thorven M, Grahn A, Hedlund KO, et al. A homozygous nonsense mutation (428G-->A) in the human secretor (FUT2) gene provides resistance to symptomatic norovirus (GGII) infections. *J Virol* **2005**; 79(24): 15351-5.
15. Bucardo F, Kindberg E, Paniagua M, et al. Genetic susceptibility to symptomatic norovirus infection in Nicaragua. *J Med Virol* **2009**; 81(4): 728-35.
16. Currier RL, Payne DC, Staat MA, et al. Innate susceptibility to norovirus infections influenced by FUT2 genotype in a United States pediatric population. *Clin Infect Dis* **2015**; 60(11):1631-1638.
17. Liu P, Wang X, Lee JC, et al. Genetic Susceptibility to Norovirus GII.3 and GII.4 Infections in Chinese Pediatric Diarrheal Disease. *Pediatr Infect Dis J* **2014**; 33(11): e305-e9.
18. Lopman BA, Trivedi T, Vicuña Y, et al. Norovirus Infection and Disease in an Ecuadorian Birth Cohort: Association of Certain Norovirus Genotypes With Host FUT2 Secretor Status. *J Infect Dis* **2014**; 211(11):1813-1821
19. Nordgren J, Nitiema LW, Ouermi D, Simpoire J, Svensson L. Host genetic factors affect susceptibility to norovirus infections in Burkina Faso. *PLOS One* **2013**; 8(7): e69557.

20. Van Trang N, Vu HT, Le NT, Huang P, Jiang X, Anh DD. Association between norovirus and rotavirus infection and histo-blood group antigen types in Vietnamese children. *J Clin Microbiol* **2014**; 52(5): 1366-74.
21. Imbert-Marcille BM, Barbe L, Dupe M, et al. A FUT2 gene common polymorphism determines resistance to rotavirus A of the P[8] genotype. *J Infect Dis* **2014**; 209(8): 1227-30.
22. Nordgren J, Sharma S, Bucardo F, et al. Both Lewis and Secretor Status Mediate Susceptibility to Rotavirus Infections in a Rotavirus Genotype Dependent Manner. *Clin Infect Dis* **2014**; 59(11):1567-73
23. Payne DC, Currier RL, Staat MA, et al. Epidemiologic Association between FUT2 Secretor Status and Severe Rotavirus Gastroenteritis in US Children. *JAMA Pediatr* [in press].