

June 23, 2011

The following file is a list of studies which identify Blastocystis as pathogenic.

This document and others are available from BRF's web site,
<http://www.bhomcenter.org>

The methodology used in selecting these studies is identical to that used in the following study:

Boorom KF, Smith H, Nimri L, Viscogliosi E, Spanakos G, Parkar U, Li LH, Zhou XN, Ok UZ, Leelayoova S, Jones MS. [Oh my aching gut: irritable bowel syndrome, Blastocystis, and asymptomatic infection.](#) Parasit Vectors. 2008 Oct 21;1(1):40.

URL for this paper:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2627840/?tool=pubmed>

The reader can refer to that study for details. Additionally, several pages which describe the methodology follow this page.

Related URL's:

Complete list of Pubmed-Indexed studies identifying Blastocystis as pathogenic (144 studies):
http://bhomcenter.org/pdfs/2011_06_BRF_PATHOGENIC_LIST.pdf

Same list as above, including abstracts (144 studies):
http://bhomcenter.org/pdfs/2011_06_BRF_PATHOGENIC_LIST_LONG.pdf

Complete list of Pubmed-Indexed studies identifying Blastocystis as non-pathogenic (17 studies):
http://bhomcenter.org/pdfs/2011_06_BRF_NONPATHOGENIC_LIST.pdf

Same list as above, including abstracts (17 studies):
http://bhomcenter.org/pdfs/2011_06_BRF_NONPATHOGENIC_LIST_LONG.pdf

Best Regards,

Ken Boorom
Vice President Research
Blastocystis Research Foundation

Supplementary File #3 for "Oh my aching gut: IBS, Blastocystis, and asymptomatic infection"

BMC Parasites and Vectors, 2008

This Excel file contains four spreadsheets which can be accessed by selecting the appropriate tab at the bottom on the screen

Contents

Worksheet "MethodsResults"	This worksheet
Worksheet "MoreResults"	Table comparing researcher finding with study method
Worksheet "StudiesIncluded"	List of all studies included in this analysis
Worksheet "StudiesNotIncluded"	List of all studies not included in this analysis

ANALYSIS OF RESEARCHER CONCLUSION ON PATHOGENICITY IN PUBLISHED STUDIES OF BLASTOCYSTIS INFECTION

Methods Used In Systematic Review of Blastocystis Papers:

Articles indexed by the United States National Institutes of Health PubMed database were searched for the term Blastocystis on January 19, 2008. Articles were included where medically relevant information was reported regarding Blastocystis pathogenicity in immunocompetent humans following some study of Blastocystis from a human, or study of Blastocystis isolates known to be carried by humans. Studies reporting that Blastocystis was pathogenic were only included if information could be obtained from that study's title and abstract. An additional effort was made to identify studies that reported that Blastocystis was non-pathogenic. A full-text copy of any paper finding Blastocystis was non-pathogenic was obtained, and the citations were searched for further studies that supported that view. These studies were added to this survey.

Studies were classified as reporting Blastocystis being a "non-pathogenic organism" when no immune response was found, no association was found between Blastocystis infection and symptoms or no medically relevant physiological changes were found in association with Blastocystis infection.

Studies were classified as reporting Blastocystis being a "pathogenic organism" when an immune response unique to symptomatic patients was detected, Blastocystis infection was associated with symptoms, or medically relevant physiological changes were found in association with Blastocystis infection. The review methods were separated into various specific categories using the criteria below.

Animal studies seek to assess pathogenicity by determining if laboratory animals that are experimentally infected with the organism exhibit symptoms of disease.

Antibody studies seek to determine if patients in whom an organism is suggested to cause disease exhibit a specific antibody response to the organism that was absent in asymptomatic patients.

Genotyping studies seek to assess pathogenicity by determining if symptomatic status is correlated with a specific genotype of an organism.

Clinical studies seek to infer pathogenicity from information collected about the patient's symptoms, response to medical interventions, and test results in a clinical environment.

In vitro cell culture studies co-culture the organism with intestinal epithelial cells and determine if the impact of the organism on the cells is consistent with the symptoms reported in the infection.

Case Reports can be considered clinical studies performed with a small number of patients.

Studies that used 10 or more patients were classified as **clinical studies**.

Epidemiological surveys seek to assess pathogenicity by determining if symptoms occur at a higher rate in a group with Blastocystis infection or by determining if Blastocystis occurs at a higher rate in a group with disease (case-control study)

Physiological studies seek to assess pathogenicity by identifying measurable physiological properties that are altered during infection with Blastocystis

Results of Survey

Of the 680 studies returned through the PubMed search, 102 met the criteria for inclusion in this review. Excluded studies consisted of 209 microbiological studies without clinical information; 134 parasitological surveys that did not include clinical information; 53 reviews; 49 studies of Blastocystis in immunocompromised persons; 40 studies that did not focus on Blastocystis directly; 38 studies of Blastocystis in animals; 36 studies where insufficient information was available in the title and abstract to assess the study's conclusions; 12 comments on other studies; and 7 studies where no clear conclusion was discernable.

Of the 102 papers meeting this review criteria, 16% (16/102) reported findings consistent with Blastocystis being non-pathogenic, while 84% (86/102) of the studies reported data suggesting that Blastocystis caused disease (pathogenic).

NOTES:

In the survey of studies conducted for this review, it was found that 44% (8/18) of the studies performed in North America before 1994 reported negative findings, while only 7% (6/85) of the studies performed after 1994 or outside North America reported such findings, a statistically significant correlation ($P < 0.0022$, Fisher's Exact Test).

PubMed

U.S. National Library of Medicine
National Institutes of Health

Filter your results: All (144)

[Manage Filters](#)

Display Settings: Summary, 200 per page, Sorted by Pub Date

Results: 144

- [Blastocystis sp. Subtype 4 is Common in Danish Blastocystis-Positive Patients Presenting with Acute Diarrhea.](#)
 1. Stensvold CR, Christiansen DB, Olsen KE, Nielsen HV.
Am J Trop Med Hyg. 2011 Jun;84(6):883-5.
PMID: 21633023 [PubMed - in process]

- [The potential use of 29 kDa protein as a marker of pathogenicity and diagnosis of symptomatic infections with Blastocystis hominis.](#)
 2. Abou Gamra MM, Elwakil HS, El Deeb HK, Khalifa KE, Abd Elhafiz HE.
Parasitol Res. 2011 May;108(5):1139-46. Epub 2010 Dec 7.
PMID: 21136081 [PubMed - in process]

- [Six ulcerative colitis patients with refractory symptoms co-infective with Blastocystis hominis in China.](#)
 3. Tai WP, Hu PJ, Wu J, Lin XC.
Parasitol Res. 2011 May;108(5):1207-10. Epub 2010 Nov 23.
PMID: 21104272 [PubMed - in process]

- [Clinical efficacy of Saccharomyces boulardii or metronidazole in symptomatic children with Blastocystis hominis infection.](#)
 4. Dinleyici EC, Eren M, Dogan N, Reyhanioglu S, Yargic ZA, Vandenplas Y.
Parasitol Res. 2011 Mar;108(3):541-5. Epub 2010 Oct 5.
PMID: 20922415 [PubMed - in process]

- [Protease activity of Blastocystis hominis subtype3 in symptomatic and asymptomatic patients.](#)
 5. Abdel-Hameed DM, Hassanin OM.
Parasitol Res. 2011 Jan 29. [Epub ahead of print]
PMID: 21279383 [PubMed - as supplied by publisher]

- [Comparison of methods for detection of Blastocystis infection in routinely submitted stool samples, and also in IBS/IBD Patients in Ankara, Turkey.](#)
 6. Dogruman-AI F, Simsek Z, Boorum K, Ekici E, Sahin M, Tuncer C, Kustimur S, Altinbas A.
PLoS One. 2010 Nov 18;5(11):e15484.
PMID: 21124983 [PubMed - indexed for MEDLINE] **Free PMC Article**

- [Blastocystis sp. subtype 2 detection during recurrence of gastrointestinal and urticarial symptoms.](#)
 7. Vogelberg C, Stensvold CR, Monecke S, Ditzen A, Stopsack K, Heinrich-Gräfe U, Pöhlmann C.
Parasitol Int. 2010 Sep;59(3):469-71. Epub 2010 Apr 2.
PMID: 20363362 [PubMed - indexed for MEDLINE]

- [Blastocystis hominis and Dientamoeba fragilis in patients fulfilling irritable bowel syndrome criteria.](#)
 8. Yakoob J, Jafri W, Beg MA, Abbas Z, Naz S, Islam M, Khan R.
Parasitol Res. 2010 Aug;107(3):679-84. Epub 2010 Jun 8.
PMID: 20532564 [PubMed - indexed for MEDLINE]

- [Pathogenic potential of Blastocystis hominis in laboratory mice.](#)
 9. Elwakil HS, Hewedi IH.
Parasitol Res. 2010 Aug;107(3):685-9. Epub 2010 May 25.
PMID: 20499092 [PubMed - indexed for MEDLINE]

- [Elevated levels of urinary hyaluronidase in humans infected with intestinal parasites.](#)
 10. Chandramathi S, Suresh K, Kuppusamy UR.
Ann Trop Med Parasitol. 2010 Jul;104(5):449-52. No abstract available.
PMID: 20819313 [PubMed - indexed for MEDLINE]

- [Urinary hyaluronidase activity in rats infected with Blastocystis hominis--evidence for invasion?](#)
 11. Chandramathi S, Suresh KG, Mahmood AA, Kuppusamy UR.
Parasitol Res. 2010 May;106(6):1459-63. Epub 2010 Apr 1.
PMID: 20358228 [PubMed - indexed for MEDLINE]

12. [Encystation--survival of Blastocystis hominis in immunocompetent mice abdomen cavity.](#)
Zhou XB, Zhang X, Qiao JY, Cai J, Cheng S, Yuan Y, Li J.
Parasitol Res. 2010 May;106(6):1315-20. Epub 2010 Mar 20.
PMID: 20306208 [PubMed - indexed for MEDLINE]
13. [Molecular characterization of Blastocystis isolates from zoo animals and their animal-keepers.](#)
Parker U, Traub RJ, Vitali S, Elliot A, Levecke B, Robertson I, Geurden T, Steele J, Drake B, Thompson RC.
Vet Parasitol. 2010 Apr 19;169(1-2):8-17. Epub 2010 Jan 4.
PMID: 20089360 [PubMed - indexed for MEDLINE]
14. [Irritable bowel syndrome: is it associated with genotypes of Blastocystis hominis.](#)
Yakoob J, Jafri W, Beg MA, Abbas Z, Naz S, Islam M, Khan R.
Parasitol Res. 2010 Apr;106(5):1033-8. Epub 2010 Feb 23.
PMID: 20177906 [PubMed - indexed for MEDLINE]
15. [High levels of oxidative stress in rats infected with Blastocystis hominis.](#)
Chandramathi S, Suresh K, Shuba S, Mahmood A, Kuppusamy UR.
Parasitology. 2010 Apr;137(4):605-11. Epub 2009 Dec 7.
PMID: 19961647 [PubMed - indexed for MEDLINE]
16. [Solubilized antigen of Blastocystis hominis facilitates the growth of human colorectal cancer cells, HCT116.](#)
Chandramathi S, Suresh K, Kuppusamy UR.
Parasitol Res. 2010 Mar;106(4):941-5. Epub 2010 Feb 18.
PMID: 20165878 [PubMed - indexed for MEDLINE]
17. [\[Clinical and epidemiological characteristics of blastocystis hominis\].](#)
Trabelsi S, Ali IB, Khaled S.
Tunis Med. 2010 Mar;88(3):190-2. French.
PMID: 20415193 [PubMed - indexed for MEDLINE] **Free Article**
18. [Differences in clinical significance and morphologic features of Blastocystis sp subtype 3.](#)
Vassalos CM, Spanakos G, Vassalou E, Papadopoulou C, Vakalis N.
Am J Clin Pathol. 2010 Feb;133(2):251-8.
PMID: 20093234 [PubMed - indexed for MEDLINE] **Free Article**
19. [Intestinal protozoa infections among patients with ulcerative colitis: prevalence and impact on clinical disease course.](#)
Yamamoto-Furusho JK, Torijano-Carrera E.
Digestion. 2010;82(1):18-23. Epub 2010 Feb 9.
PMID: 20145404 [PubMed - indexed for MEDLINE]
20. [Blastocystis: unravelling potential risk factors and clinical significance of a common but neglected parasite.](#)
Stensvold CR, Lewis HC, Hammerum AM, Porsbo LJ, Nielsen SS, Olsen KE, Arendrup MC, Nielsen HV, Mølbak K.
Epidemiol Infect. 2009 Nov;137(11):1655-63. Epub 2009 Apr 27.
PMID: 19393117 [PubMed - indexed for MEDLINE]
21. [Blastocystis hominis infection in long-term care facilities in Taiwan: prevalence and associated clinical factors.](#)
Su FH, Chu FY, Li CY, Tang HF, Lin YS, Peng YJ, Su YM, Lee SD.
Parasitol Res. 2009 Oct;105(4):1007-13. Epub 2009 Jun 2.
PMID: 19488784 [PubMed - indexed for MEDLINE]
22. [High prevalence of subtype 4 among isolates of Blastocystis hominis from symptomatic patients of a health district of Valencia \(Spain\).](#)
Domínguez-Márquez MV, Guna R, Muñoz C, Gómez-Muñoz MT, Borrás R.
Parasitol Res. 2009 Oct;105(4):949-55. Epub 2009 May 27.
PMID: 19471964 [PubMed - indexed for MEDLINE]
23. [Blastocystis subtypes in irritable bowel syndrome and inflammatory bowel disease in Ankara, Turkey.](#)
Dogruman-AI F, Kustimur S, Yoshikawa H, Tuncer C, Simsek Z, Tanyuksel M, Araz E, Boorum K.
Mem Inst Oswaldo Cruz. 2009 Aug;104(5):724-7.
PMID: 19820833 [PubMed - indexed for MEDLINE] **Free Article**
24. [Elevated levels of urinary hydrogen peroxide, advanced oxidative protein product \(AOPP\) and malondialdehyde in humans infected with intestinal parasites.](#)
Chandramathi S, Suresh K, Anita ZB, Kuppusamy UR.
Parasitology. 2009 Mar;136(3):359-63. Epub 2009 Jan 21.

PMID: 19154644 [PubMed - indexed for MEDLINE]

- 25. [Association of Blastocystis subtype 3 and 1 with patients from an Oregon community presenting with chronic gastrointestinal illness.](#)
Jones MS, Whipps CM, Ganac RD, Hudson NR, Boorom K.
Parasitol Res. 2009 Jan;104(2):341-5. Epub 2008 Oct 16. Erratum in: Parasitol Res. 2009 Jan;104(2):491. Boorom, Kenneth [corrected to Boorom, Kenneth].
PMID: 18923844 [PubMed - indexed for MEDLINE]
- 26. [\[The effect of trimethoprim-sulfamethoxazole in Blastocystis hominis infection\].](#)
Ertuğ S, Dost T, Ertaçlar H, Gültekin B.
Turkiye Parazit Derg. 2009;33(4):270-2. Turkish.
PMID: 20101575 [PubMed - indexed for MEDLINE] **Free Article**
- 27. [Phenotypic and genotypic characterisation of Blastocystis hominis isolates implicates subtype 3 as a subtype with pathogenic potential.](#)
Tan TC, Suresh KG, Smith HV.
Parasitol Res. 2008 Dec;104(1):85-93. Epub 2008 Sep 16.
PMID: 18795333 [PubMed - indexed for MEDLINE]
- 28. [Oh my aching gut: irritable bowel syndrome, Blastocystis, and asymptomatic infection.](#)
Boorom KF, Smith H, Nimri L, Viscogliosi E, Spanakos G, Parkar U, Li LH, Zhou XN, Ok UZ, Leelayoova S, Jones MS.
Parasit Vectors. 2008 Oct 21;1(1):40.
PMID: 18937874 [PubMed - in process] **Free PMC Article**
- 29. [Blastocystosis: an emerging or re-emerging potential zoonosis?](#)
Vassalos CM, Papadopoulou C, Vakalis NC.
Vet Ital. 2008 Oct-Dec;44(4):679-84.
PMID: 20411495 [PubMed] **Free Article**
- 30. [Molecular epidemiology of Blastocystis infections in Turkey.](#)
Ozyurt M, Kurt O, Mølbak K, Nielsen HV, Haznedaroglu T, Stensvold CR.
Parasitol Int. 2008 Sep;57(3):300-6. Epub 2008 Feb 13.
PMID: 18337161 [PubMed - indexed for MEDLINE]
- 31. [Protein profile and morphometry of cultured human Blastocystis hominis from children with gastroenteritis and healthy ones.](#)
Hegazy MM, Maklout LM, El Hamshary EM, Dawoud HA, Eida AM.
J Egypt Soc Parasitol. 2008 Aug;38(2):453-64.
PMID: 18853619 [PubMed - indexed for MEDLINE]
- 32. [A possible link between subtype 2 and asymptomatic infections of Blastocystis hominis.](#)
Dogruman-AI F, Dagci H, Yoshikawa H, Kurt O, Demirel M.
Parasitol Res. 2008 Aug;103(3):685-9. Epub 2008 Jun 5.
PMID: 18523804 [PubMed - indexed for MEDLINE]
- 33. [Is Blastocystis hominis a new etiologic factor or a coincidence in iron deficiency anemia?](#)
Yavasoglu I, Kadikoylu G, Uysal H, Ertug S, Bolaman Z.
Eur J Haematol. 2008 Jul;81(1):47-50. Epub 2008 Apr 4.
PMID: 18397391 [PubMed - indexed for MEDLINE]
- 34. [Symptomatic infection with Blastocystis sp. subtype 8 successfully treated with trimethoprim-sulfamethoxazole.](#)
Stensvold CR, Arendrup MC, Nielsen HV, Bada A, Thorsen S.
Ann Trop Med Parasitol. 2008 Apr;102(3):271-4. No abstract available.
PMID: 18348782 [PubMed - indexed for MEDLINE]
- 35. [Pathophysiological variability of different genotypes of human Blastocystis hominis Egyptian isolates in experimentally infected rats.](#)
Hussein EM, Hussein AM, Eida MM, Atwa MM.
Parasitol Res. 2008 Apr;102(5):853-60. Epub 2008 Jan 11.
PMID: 18193282 [PubMed - indexed for MEDLINE]
- 36. [Blastocystis ratti contains cysteine proteases that mediate interleukin-8 response from human intestinal epithelial cells in an NF-kappaB-dependent manner.](#)
Puthia MK, Lu J, Tan KS.
Eukaryot Cell. 2008 Mar;7(3):435-43. Epub 2007 Dec 21.
PMID: 18156286 [PubMed - indexed for MEDLINE] **Free PMC Article**

- [Acute urticaria associated with amoeboid forms of Blastocystis sp. subtype 3.](#)
37. Katsarou-Katsari A, Vassalos CM, Tzanetou K, Spanakos G, Papadopoulou C, Vakalis N.
Acta Derm Venereol. 2008;88(1):80-1. No abstract available.
PMID: 18176765 [PubMed - indexed for MEDLINE] **Free Article**
- [\[Dot enzyme-linked immunosorbent assay for detection of serum antibody to Blastocystis hominis in humans\].](#)
38. Su SL, Yan YM, Liao H, Chen GF, Zhang RQ, Xie QJ, Le X, Hu YQ, Zeng XY, Lan HY, Xie RL, Huang Z.
Zhongguo Ji Sheng Chong Xue Yu Ji Sheng Chong Bing Za Zhi. 2007 Jun;25(3):256-8. Chinese.
PMID: 18038792 [PubMed - indexed for MEDLINE]
- [\[Chronic angioedema and blastocystis hominis infection\].](#)
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Rev Gastroenterol Peru. 2007 Apr-Jun;27(2):191-3. Spanish.
PMID: 17712397 [PubMed - indexed for MEDLINE]
- [Blastocystis hominis colitis in a haemophilic patient as a cause of lower gastrointestinal bleeding.](#)
40. Lucía JF, Aguilar C, Betran A.
Haemophilia. 2007 Mar;13(2):224-5. No abstract available.
PMID: 17286783 [PubMed - indexed for MEDLINE]
- [Irritable bowel syndrome: a review on the role of intestinal protozoa and the importance of their detection and diagnosis.](#)
41. Stark D, van Hal S, Marriott D, Ellis J, Harkness J.
Int J Parasitol. 2007 Jan;37(1):11-20. Epub 2006 Oct 12. Review.
PMID: 17070814 [PubMed - indexed for MEDLINE]
- [Is this recently characterized gastrointestinal pathogen responsible for rising rates of inflammatory bowel disease \(IBD\) and IBD associated autism in Europe and the United States in the 1990s?](#)
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PMID: 17382484 [PubMed - indexed for MEDLINE]
- [The effect of Blastocystis hominis on the growth status of children.](#)
43. Ertug S, Karakas S, Okyay P, Ergin F, Oncu S.
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PMID: 17179909 [PubMed - indexed for MEDLINE]
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44. Ozçakir O, Güreşer S, Ergüven S, Yılmaz YA, Topaloğlu R, Hasçelik G.
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PMID: 18224616 [PubMed - indexed for MEDLINE] **Free Article**
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45. Kaya S, Cetin ES, Aridoğan BC, Arikan S, Demirci M.
Türkiye Parazitol Derg. 2007;31(3):184-7.
PMID: 17918055 [PubMed - indexed for MEDLINE] **Free Article**
- [\[A case of infant infected by Blastocystis hominis\].](#)
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Zhongguo Ji Sheng Chong Xue Yu Ji Sheng Chong Bing Za Zhi. 2006 Dec;24(6):432. Chinese. No abstract available.
PMID: 17366972 [PubMed - indexed for MEDLINE]
- [\[Study on the biological characteristic of Blastocystis hominis: morphology, mode of reproduction and the relation to bacteria\].](#)
47. Qiao JY, Zhang X, Wei ZC, Yang JH, Li YQ, Zhang R.
Wei Sheng Yan Jiu. 2006 Nov;35(6):739-42. Chinese.
PMID: 17290755 [PubMed - indexed for MEDLINE]
- [PCR fingerprinting of Blastocystis isolated from symptomatic and asymptomatic human hosts.](#)
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PMID: 16628457 [PubMed - indexed for MEDLINE]
- [Blastocystis hominis--an emerging and imitating cause of acute abdomen in children.](#)
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J Pediatr Surg. 2006 Aug;41(8):1489-91.
PMID: 16863863 [PubMed - indexed for MEDLINE]

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Garavelli PL.
Recenti Prog Med. 2006 Jul-Aug;97(7-8):397-400. Italian.
PMID: 16913176 [PubMed - indexed for MEDLINE]
52. [\[Impact of blastocystis hominis infection on ultrastructure of intestinal mucosa in mice\].](#)
Zhang HW, Li W, Yan QY, He LJ, Su YP.
Zhongguo Ji Sheng Chong Xue Yu Ji Sheng Chong Bing Za Zhi. 2006 Jun;24(3):187-91. Chinese.
PMID: 17094618 [PubMed - indexed for MEDLINE]
53. [Chronic urticaria due to Blastocystis hominis.](#)
Gupta R, Parsi K.
Australas J Dermatol. 2006 May;47(2):117-9.
PMID: 16637808 [PubMed - indexed for MEDLINE]
54. [Predominance of amoeboid forms of Blastocystis hominis in isolates from symptomatic patients.](#)
Tan TC, Suresh KG.
Parasitol Res. 2006 Feb;98(3):189-93. Epub 2005 Dec 2.
PMID: 16323025 [PubMed - indexed for MEDLINE]
55. [\[Experimental infection of mice with Blastocystis hominis\].](#)
Yao FR, Qiao JY, Zhao Y, Zhang X, Yang JH, Li XQ.
Zhongguo Ji Sheng Chong Xue Yu Ji Sheng Chong Bing Za Zhi. 2005 Dec 30;23(6):444-8. Chinese.
PMID: 16566218 [PubMed - indexed for MEDLINE]
56. [The association of Blastocystis hominis and Endolimax nana with diarrheal stools in Zambian school-age children.](#)
Graczyk TK, Shiff CK, Tamang L, Munsaka F, Beitin AM, Moss WJ.
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PMID: 16249910 [PubMed - indexed for MEDLINE]
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Rossignol JF, Kabil SM, Said M, Samir H, Younis AM.
Clin Gastroenterol Hepatol. 2005 Oct;3(10):987-91.
PMID: 16234044 [PubMed - indexed for MEDLINE]
58. [Blastocystis hominis among symptomatic and asymptomatic individuals in Talkha Center, Dakahlia Governorate, Egypt.](#)
El-Shazly AM, Abdel-Magied AA, El-Beshbishi SN, El-Nahas HA, Fouad MA, Monib MS.
J Egypt Soc Parasitol. 2005 Aug;35(2):653-66.
PMID: 16083074 [PubMed - indexed for MEDLINE]
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Moghaddam DD, Ghadirian E, Azami M.
Parasitol Res. 2005 Jun;96(4):273-5. Epub 2005 May 25.
PMID: 15915364 [PubMed - indexed for MEDLINE]
60. [Remission of delayed pressure urticaria after eradication of Blastocystis hominis.](#)
Cassano N, Scoppio BM, Loviglio MC, Vena GA.
Acta Derm Venereol. 2005;85(4):357-8. No abstract available.
PMID: 16191864 [PubMed - indexed for MEDLINE] **Free Article**
61. [\[Epidemiologic and laboratory assessments of etiologic implications of Blastocystis hominis in gastrointestinal diseases\].](#)
Luca M, Ivan A, Goția S, Cașotă RE, Danciu V.
Rev Med Chir Soc Med Nat Iasi. 2005 Jan-Mar;109(1):140-3. Romanian.
PMID: 16607843 [PubMed - indexed for MEDLINE]
62. [\[Clinical symptoms in cases caused by entamoeba coli and blastocystis hominis.\]](#)
Kaya S, Cetin ES, Akçam Z, Kesbıç H, Demırcı M.
Türkiye Parazitolo Derg. 2005;29(4):229-231. Turkish.
PMID: 17124674 [PubMed - as supplied by publisher] **Free Article**

- 63. [Evidence of waterborne transmission of Blastocystis hominis.](#)
Leelayoova S, Rangsin R, Taamasri P, Naaglor T, Thathaisong U, Mungthin M.
Am J Trop Med Hyg. 2004 Jun;70(6):658-62.
PMID: 15211009 [PubMed - indexed for MEDLINE] **Free Article**

- 64. [Blastocystis hominis as a cause of hypoalbuminemia and anasarca.](#)
Nassir E, Awad J, Abel AB, Khoury J, Shay M, Lejbkowitz F.
Eur J Clin Microbiol Infect Dis. 2004 May;23(5):399-402. Epub 2004 Apr 27.
PMID: 15112065 [PubMed - indexed for MEDLINE]

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Pasqui AL, Savini E, Saletti M, Guzzo C, Puccetti L, Auteri A.
Eur Rev Med Pharmacol Sci. 2004 May-Jun;8(3):117-20.
PMID: 15368795 [PubMed - indexed for MEDLINE]

- 66. [Irritable bowel syndrome: in search of an etiology: role of Blastocystis hominis.](#)
Yakoob J, Jafri W, Jafri N, Khan R, Islam M, Beg MA, Zaman V.
Am J Trop Med Hyg. 2004 Apr;70(4):383-5.
PMID: 15100450 [PubMed - indexed for MEDLINE] **Free Article**

- 67. [Serum zinc and magnesium levels in patients with blastocystosis.](#)
Kilic E, Yazar S, Saraymen R.
Biol Trace Elem Res. 2004 Apr;98(1):21-6.
PMID: 15051897 [PubMed - indexed for MEDLINE]

- 68. [Cutaneous lesions in Blastocystis hominis infection.](#)
Valsecchi R, Leghissa P, Greco V.
Acta Derm Venereol. 2004;84(4):322-3. No abstract available.
PMID: 15339085 [PubMed - indexed for MEDLINE]

- 69. [Prevalence of intestinal parasites among individuals with allergic skin diseases.](#)
Giacometti A, Cironi O, Antonicelli L, D'Amato G, Silvestri C, Del Prete MS, Scalise G.
J Parasitol. 2003 Jun;89(3):490-2.
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