

MALARIA 2003

No. 23, 2004

In 2003, there were 103 laboratory-notified cases of malaria in Denmark, [table 1](#). This represents a continued decline from the previous years: 2002 (135), 2001 (154) and 2000 (205). The number of cases of malaria caused by *P. falciparum* has simultaneously declined from 88 to 70, including at least 44 cases from tropical Africa. In 2003, *P. falciparum* malaria was diagnosed in 54 Danish travellers and 16 immigrants, as against 70 Danes and 18 immigrants in 2002. The marked decline in numbers of imported cases of malaria coincides with an increasing use of Malarone as malaria prophylaxis on short-term trips, while there is no sign of a decline in travel activity.

Primary prophylaxis

Prevention of mosquito bites is important, as no form of pharmacological prophylaxis provides 100% protection. Mosquito repellents may have a certain effect for some hours. The agents may have a local irritant effect and cannot be used for children under the age of 3. A mosquito net impregnated with a synthetic pyrethroid and hung around the bed provides approx. 50% protection. The net should be so loose that the sleeper does not touch it in the course of the night, and it should be rolled up by day.

Pharmacological prophylaxis

The objective of pharmacological prophylaxis is to prevent the serious type of malaria caused by *P. falciparum*. There are three levels of pharmacological prophylaxis:

- I: chloroquine;
- II: chloroquine and proguanil (Paludrine);
- III: mefloquine (Lariam), atovaquone/proguanil (Malarone) or doxycycline.

Chloroquine alone is used only for the Middle East and Central America.

Chloroquine and proguanil (Paludrine) are used in areas where the occurrence of resistance to chloroquine is reported as only sporadic.

Lariam, Malarone or doxycycline is used in areas with high risk of infection with chloroquine-resistant *P. falciparum*, which occurs primarily in tropical Africa and South-East Asia. The three preparations are equally efficacious, but mefloquine resistance has been described in places including South-East Asia.

Table 1. Number of laboratory-notified cases of malaria, 2003

	South-/central				Not stated *)	Total 2003	Total 2002
	Africa	Asia	America	Oceania			
<i>P. falciparum</i>	44	1	0	0	25	70	88
<i>P. vivax</i>	6	3	1	2	6	18	30
<i>P. ovale</i>	4	1	0	0	2	7	6
<i>P. malariae</i>	4	0	0	0	0	4	6
Mixed	2	0	0	0	0	2	2
Not stated	0	0	0	0	2	2	3
Total	60	5	1	2	35	103	135

*) Including travellers to more than one continent

Consequently, the choice between Lariam, Malarone or doxycycline is made in consultation with the traveller on the basis of the destination and length of the trip, EPI-NEWS 22 a+b/04, and a consideration of possible side effects of the preparations.

Pregnancy and children

Pregnant women must generally be advised not to travel to areas with a high risk of chloroquine-resistant *falciparum* malaria. According to WHO, Lariam can be used after the 16th week of pregnancy, while doxycycline is absolutely contraindicated. Thus, there is still no effective malaria prophylaxis for pregnant women who travel in the first trimester to tropical Africa or South-East Asia. According to WHO, Lariam may be given to children with a body weight down to 5 kg, in whom ¼ tablet is recommended, but this involves an overdose relative to the adult dosage. Lariam should only be used for children after thorough consideration and in full agreement with the parents. Malarone may be given to children with a body weight down to 11 kg and is available as tablets in ¼ adult dosage. Doxycycline is contraindicated for children under 12 years.

Self-treatment

Self-treatment should only be used in special cases, as it is decisive that the traveller be seen by a doctor in the event of fever. The preparation used should be different from that used for prophylaxis. Malarone may be used for the treatment of uncomplicated *P. falciparum* malaria. Quinine is still effective, except when travelling to northern Thailand. There may be interaction between Lariam and quinine in the form of interference with the cardiac rhythm, and for this reason, quinine should only be used with great caution for the treatment of travellers who have used Lariam as prophylaxis.

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VTEC OUTBREAK – UPDATE

In the period 17 September 2003 to 20 March 2004, 25 cases of disease caused by a special type of verocytotoxin-producing *E. coli* O157 were recorded. The cases were only found in Copenhagen and North Zealand. The result of a case-control study raised a strong suspicion that milk from a certain dairy, sold through a certain supermarket chain, was the source of infection, EPI-NEWS 14/04. Follow-up interview with patients who had not been in the case-control study reinforced this suspicion. A total of 13 out of 22 interviewed patients remembered having drunk milk from the dairy in question. On inspection at the dairy, the foodstuff authorities did not find circumstances that in themselves explained how contamination had occurred. Nor has the bacterium been detected in samples collected at the dairy. With relatively few cases of disease, it must be assumed that the contamination was low and thus it is not surprising that it has not been possible to find the bacterium.

New cases of disease have not been recorded after the dairy temporarily stopped production and reviewed the production equipment and conducted thorough cleaning and disinfection.

It is still the conclusion of the Ministry of Food, Agriculture and Fisheries, the Danish Zoonosis Centre and SSI that the source of the outbreak was in all probability a certain type of milk from the dairy in question. The results of the follow-up interview and the fact that the outbreak has now ceased reinforce this conclusion. There is no longer any reason to believe that the company's products are contaminated.

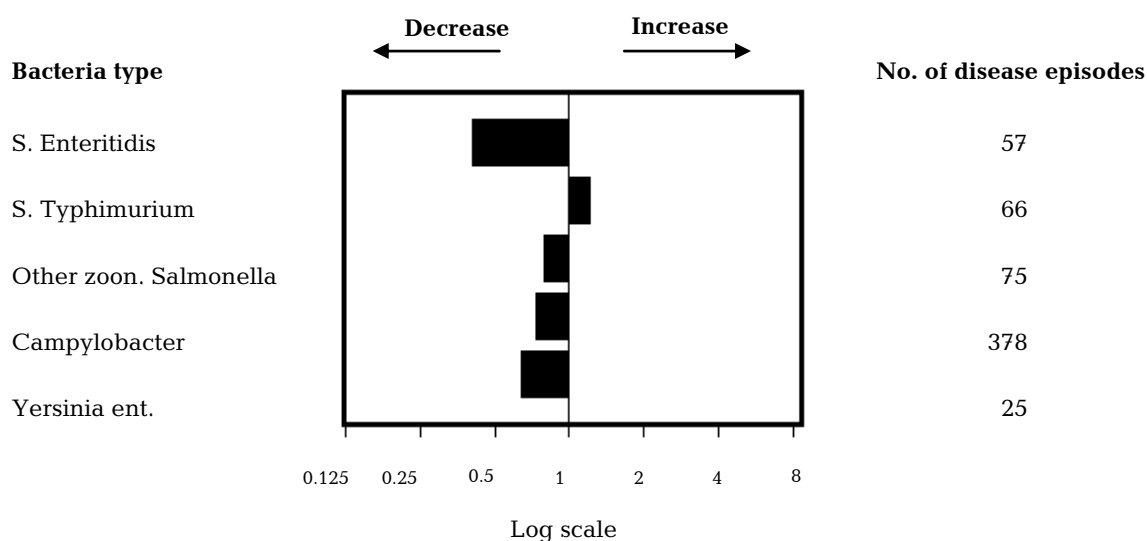
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Patients with positive culture of pathogenic intestinal bacteria, March-April 2004

County	S. Enteritidis		S. Typhimurium		Other zoon. Salmonella		Campylobacter		Yersinia ent.	
	March	April	March	April	March	April	March	April	March	April
Copenhagen Munic.	2	3	3	4	5	7	27	28	-	2
Frederiksberg Munic.	-	-	-	-	-	2	3	2	-	-
Copenhagen	4	6	4	3	8	10	32	23	2	2
Frederiksborg	3	4	1	1	4	2	14	15	2	2
Roskilde	1	1	3	-	4	2	5	11	-	-
West Zealand	3	2	2	1	2	1	4	6	-	-
Storstrøm	1	4	2	1	-	2	8	7	1	-
Bornholm	1	-	-	-	-	-	-	1	-	-
Funen	3	1	5	1	5	1	12	14	2	2
South Jutland	1	1	4	3	-	-	11	9	-	-
Ribe	2	1	-	-	-	-	10	13	-	3
Vejle	1	-	6	3	2	2	12	13	1	1
Ringkøbing	-	1	2	-	2	1	8	13	-	-
Aarhus	2	2	3	4	2	5	18	20	2	2
Viborg	-	1	1	4	1	1	5	8	-	-
North Jutland	2	4	2	3	1	3	13	13	-	1
DK March/April 2004	26	31	38	28	36	39	182	196	10	15
DK March/April 2003	18	26	15	19	27	40	119	112	17	11

Barometer for pathogenic intestinal bacteria, March-April 2004



The barometer shows number of disease episodes in the two relevant months compared with the average of 15 two-month periods in the last five years. Further surveillance data may be obtained from www.germ.dk.