EAT! EAT! EAT!
& ALWAYS STAY THIN!

NO DIET - NO BATHS
NO EXERCISE!

FAT
the ENEMY that is shortening Your Life
BANISHED!

HOW?
with
SANITIZED
TAPE
WORMS
Jar Packed

“FRIENDS FOR A
‘FAIR FORM’

Easy To
Swallow!

No Ill
Effects!

Prepared By
W. T.
BRIDGE, Chemist
New York

SEND NO
MONEY
PARTICULARS
MAILED
FREE
Man of forty or forty-five. Strong build contrasting with slight stature (5'11"). Osteoarthritis and scoliosis.

Probable cause of death: Bilharzia.
ARE PARASITES MAKING YOU FAT?

NEWS! 1 IN 3 AMERICANS ARE AFFECTED

Discovery: The sneaky nutrient shortfalls that your food cravings reveal

DROP 22 LBS IN 2 WEEKS
CURE TIREDNESS

GET WHAT YOU WANT!

More MONEY? see pg 86
More TIME? see pg 94
More ENERGY? see pg 26
More CLOSET SPACE? pg 90
THE ORIGINAL PARASITE ZAPPER
SOLD AROUND THE WORLD

PARASITE INFORMATION
THE ORIGINAL PARASITE ZAPPER
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Boil water, mayor says

Safety of drinking supply probed in wake of mystery epidemic

By GRETCHEN SCHULTZ
Sentinel staff writer

Metropolitan Milwaukee residents were told Wednesday night to boil their water before drinking it or using it to clean food because of a recent outbreak of digestive illness.

Mayor John O. Norquist said tests on eight people who caught the illness found a type of organism that can be waterborne.

That raised suspicions about the water supply, which originates in Lake Michigan and serves Milwaukee and 10 suburbs.

The outbreak has stricken hundreds of people with diarrhea, stomach upset, vomiting and fever. Some schools have been shut down. No deaths have been reported.

Norquist issued the advisory at a 5 p.m. news conference Wednesday.

Water should be boiled for at least 5 minutes after it boils. The elderly and those with weakened immune systems should be especially careful.

It is uncertain where the water supply is at fault, Norquist said.

"We are erring on the side of caution," he said. "We do not know enough about where it came from. We are not even sure it's from the water supply."

The organism is called Cryptosporidium, a rare, unruptured parasite.

While there is no cure but time, common over-the-counter medications can relieve the symptoms, officials said.

It will take several days to determine whether the organism is in the water supply. Health Commissioner Paul D. Naimi said.

Syed N. A. Masud, director of Medical Affairs Thomas Jefferson University, said.

Water scare: The Rainbow drug store (right) at 2630 N. Oakland Ave. assures customers that it has what many people may need most these days—an anti-diarrheal medicine. Heather Giphine (above), a salesclerk in the store, was drinking spring water Wednesday night. She said her roommates were ill and she didn't want to get sick.
MESSAGE FROM GOD!

SPACE STATION MIRACLE

Revealed: The one sin that REALLY drives Him nuts.

Why He wants you to stay the Hell out of Heaven

PLUS!

PRES. BUSH'S SHOCKING PLAN TO INVADE THE MOON

NEXT WEEK'S WINNING LOTTERY NUMBERS INSIDE!

Fat-eating worms suck the blubber right out of you!
Malaria
Global Distribution of *P. falciparum*
Malaria History

• Periodic fevers have been known since antiquity
• Extended as far north as Finland and Canada
• Once a major problem in the U.S.
• Aggressive efforts to eradicate malaria (1950’s and 60’s) failed
• Laveran discovered agent in blood
• Ross and Grassi demonstrated mosquito as vector
MALARIA MORBIDITY AND MORTALITY RATES IN ALL STATES* REPORTING CASES** AND DEATHS*** DURING 1920-1946 INCLUSIVE

CASES PER 100,000 POPULATION

DEATHS PER 1,000,000 POPULATION

*INCLUDING ALL STATES AND THE DISTRICT OF COLUMBIA WHICH REPORTED CASES OR DEATHS DURING THE RESPECTIVE YEARS.
**CASES FROM "THE NOTIFIABLE DISEASES" and DEATHS FROM "VITAL STATISTICS OF U.S.", NATIONAL OFFICE OF VITAL STATISTICS, PUBLIC HEALTH SERVICE.
***EXCLUDING EXTRAFIBRALLY ACQUIRED CASES.
NEVER give her a break.
She can make you feel like
a combination of a forest fire,
a January blizzard, and an old
dish mop. She will leave
you with about as much
pep as a sack of wet sand
and now and then she
can knock you flat
for keeps . . . .
Malaria Agents

- *Plasmodium falciparum*
- *Plasmodium vivax*
- *Plasmodium ovale*
- *Plasmodium malariae*
- *Plasmodium knowlesi*
Malaria Transmission

- *Anopheles* mosquitoes
- Blood transfusion
- Injection drug use
- Congenital
Life Cycle
Clinical Manifestations

- Classic malaria paroxysm, every 48, 72 hours
- Fever, chills, sweats, headache, nausea, vomiting, malaise
- Severe malaria
  - Cerebral malaria
  - Severe anemia
- Malaria in pregnancy
Malaria and HIV

• HIV increases:
  – risk of malaria infection
  – levels of parasitemia
  – severity of disease
  – anemia in pregnant women
  – risk of low birth weight

• Malaria increases viral load in persons with HIV
Diagnosis

• Microscopy
  – stained blood smears
  – thin and thick
Diagnosis

• Rapid diagnostic tests
  – (RTDs)
  – antigen detection
Treatment

• Complicated, depends on species and location
• Artemisinin combination therapy
• Chloroquine
• Sulfadoxine-pyrimethamine
• Quinine plus doxycycline (tetracycline, clarithromycin)
• Primaquine
Malaria Vectors

- Mosquitoes of the genus *Anopheles*
- ~40 transmit malaria
- Only females take blood meals
- Female lays 50-200 eggs
- Use diverse water sources
Vector Behavior

• Host preference
  – anthropophilic
  – zoophilic

• Resting
  – endophilic
  – exophilic

• Feeding site
  – endophagagic
  – exophagagic

• Activity
  – crepuscular
  – nocturnal
Anopheles gambiae
Prevention and Control

• Insecticide treated nets (ITNs)
  – impregnated with pyrethroid insecticides
Prevention and Control

• Indoor residual spraying (IRS)
Prevention and Control

- Source reduction
  - Removal of breeding sites
  - Oils applied to water
  - Biological control
Prevention and Control

• Intermittent preventive therapy for pregnant women (IPTp)
  – sulfadoxine-pyrimethamine
Prevention and Control

• Fogging or area spraying
• Release of sterile males
• Genetic modification of mosquitoes
• Improved housing
• Personal protection measures
• Education
Prevention and Control Vaccine??

1986 - “… Malaria Vaccine Ready for Use by 1989”

1988 - “Forlorn Hope for Malaria Vaccine”

2011 - “Breakthrough Malaria Vaccine Tantalizingly Close”

2012 - “Malaria Vaccine Gives Disappointing Results”
Malaria in Travelers

- Extensive travel to malaria-endemic regions
- ~1500 cases and ~20 deaths in US residents each year
Malaria in Travelers

- Failure to use personal protective measures
- Failure to take chemoprophylaxis (50%)
- Wrong prophylactic regimen or lack of adherence (70%)
- Delay in seeking treatment
- Delayed or missed diagnosis
- Lab errors
- Delayed or inappropriate therapy
Plasmodium knowlesi

- Simian malaria
- First natural case 1965 in an American surveyor working in the jungles of Malaysia
- Large focus of human infections reported in 2004 in Sarawak Malaysia
- Cases now recognized across Southeast Asia
**P. knowlesi Agent**

- Often misdiagnosed as *P. malariae* or *P. falciparum*

- 24 hour erythrocytic cycle – so can reach high levels of parasitemia quickly

- No persistent liver stage
P. knowlesi Reservoirs

• Long-tailed macaque

• Pig-tailed macaque
**P. knowlesi** Epidemiology

- Most common species of malaria in parts of Malaysia
- Increase in knowlesi infections probably due to:
  - encroachment into forested areas and enzootic cycle while farming
  - better recognition
- Majority of cases adults working in forest or forest fringe
  - farming, collecting bamboo
- Cases in servicemen who have trained in forested areas
- Travel-associated infection reported
Geographic Distribution of *P. knowlesi*