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## We'd Like to Hear from You!

The vast majority of feature articles that appear in our *Infectious Disease Update* come about because somebody asked for them.

Often at meetings or during informal conversations, somebody will say: "Why don't you write something about this particular subject?" Invariably, if it's important enough for one person to be interested in it, then there's an excellent chance that additional readers would like to hear about that subject.

Additionally, you might come across an article in a journal that you feel should be brought to the attention of other professionals. Just let us know the name of the journal, the volume, the month, and the page and we'll try to include it in a forthcoming issue.

To contact the Editor, just click [here!](#)

William F. Vincent, Ph.D.  
Editor



## Listeriosis - An Overview

### General

Listeriosis is a foodborne illness caused by the microorganism *Listeria monocytogenes*. The incidence of the disease is relatively low but cases of listeriosis among pregnant women can be extremely serious for the fetus; hence, the disease receives a fair amount of attention.

### History

The organism was first described in 1926 by E.G.D. Murray who named it *Bacterium monocytogenes* at the time. In 1940, the name was changed to *Listeria monocytogenes* (in honor of Joseph Lister, the father of antiseptics).

Throughout the years, infections in both animals and human were reported on but it wasn't until 1952 that it was recognized as a significant pathogen capable of causing sepsis and meningitis. It wasn't identified as a foodborne pathogen until 1981 when it was shown to be the causative agent of a foodborne outbreak in Nova Scotia involving 41 cases and 18 deaths (mostly in pregnant women and neonates).

### The Causative Agent

*L. monocytogenes* is a non-spore-forming, gram-positive bacillus that is facultatively anaerobic.

## All About This Publication

You may access *Infectious Disease Update* on our website by clicking [here](#).

In addition to back issues of *Infectious Disease Update*, other publications of Quest Diagnostics, such as *Physicians Update*, are also available on our website. To visit *Physicians Update*, click [here](#).

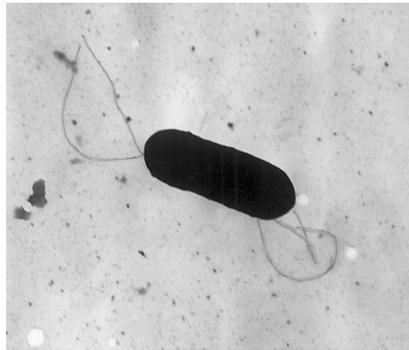
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If you no longer wish to receive this monthly notification for this publication, please click [here](#). Type "***UNSUBSCRIBE***" in the subject line.



The organism is motile but exhibits an unusual tumbling motility which is so characteristic as to be an aid to identifying the organism. In the case of most motile microorganisms, the organism moves along in a smooth motion since the helical motion of the flagella is counter-clockwise. In the case of *L. monocytogenes*, the rotation is clockwise and the organism is moving against the

gravitational pull of the earth thus causing this tumbling movement.



Electron micrograph of *Listeria monocytogenes* showing the tufts of flagella at both ends  
Courtesy of CDC



Colorized electron micrograph of *Listeria monocytogenes*  
Courtesy of CDC

The organism is capable of growing over a wide range of temperatures from 1<sup>o</sup> to 45<sup>o</sup>C. Its ability to grow at refrigerator temperatures proves to be a real problem when it comes to foodborne disease. Prepared meats (such as hot dogs) and other products contaminated with *L. monocytogenes* in low numbers can eventually end up with relatively high numbers as the organism continues to grow (slowly) in the refrigerator. This growth characteristic often leads to significant foodborne outbreaks. The organism is quite resistant to freezing, desiccation and heating which is remarkable given the fact that it is not a spore-former.

Numerous strains and serovars of *L. monocytogenes* have been identified. All are pathogenic to one degree or another.

## The Disease

There are four distinct clinical syndromes of listeriosis.

### Infection during Pregnancy

Infection during pregnancy is very serious and symptoms usually appear during the third trimester. Before that, the organism can proliferate asymptotically in the uterus. Premature birth or stillbirth often occurs. Symptoms include fever, headache and myalgia. The woman usually experiences a mild, flu-like illness lasting for 7 to 10 days.

### Neonatal Infection

There are two distinct types of neonatal infection commonly referred to as granulomatosis infantisepticum. The first type is infection *in utero* which usually results in stillbirth or premature birth. The second type is a late infection (usually associated with meningitis) that is acquired as the neonate passes through the birth canal.

### Central Nervous Infection

The organism has a predilection for the parenchyma of the brain particularly the brain stem and the meninges. Encephalitis and meningitis may develop. In these cases, mortality may be as high as 80 %.

### Gastroenteritis

This is by far the most common form of the disease. Most cases are relatively mild. The symptoms considered are diarrhea, headache, muscle aches, fever, nausea and occasionally confusion, loss of balance or convulsions. The incubation period is roughly 21 days. Most persons recover without any complications.

## Epidemiology and Transmission

### Where found in Nature

*L. monocytogenes* is ubiquitous in the environment and can be found in soil, water and silage. It has been estimated that somewhere between one and 10 % of humans carry this organism in the gastrointestinal tract without any symptoms. It is difficult to make an accurate assessment of carriers since the organism is difficult to culture from fecal specimens.

It has been isolated from at least 37 species of wild and domesticated mammals and 17 species of birds. It is possible that it can colonize fish and shellfish.

### Mode of Transmission

Most cases of listeriosis are the result of ingestion of contaminated food. The food can become contaminated by virtue of coming from animals carrying the microorganism. Good examples of this are meats, meat products and dairy products especially those prepared from unpasteurized (*i.e.* raw) milk.

Foods can also be contaminated via soil or water carrying the microorganism.

Usually the organism is killed by cooking and pasteurization. However, in certain ready-to-eat foods, such as deli meats and hot dogs, it is possible for contamination of the product to occur after it has been cooked but before it has been packaged.

### Incidence of Disease

First of all, probably the vast majority of cases occur among healthy individuals and non-pregnant females and are never diagnosed since they are mild and individuals do **not** seek medical treatment. Even if an attending physician did order a stool culture, the organism would not be identified using the conventional selective enteric media.

In the United States, it is estimated that approximately 2,500 persons

become seriously ill from listeriosis each year with about 260 dying. The incidence is higher in the summer months. The frequency in the U.S. has been calculated at 9.7 cases per million persons. Pregnant women account for about 30 % of the cases. Immunocompromised persons represent 70 % of the remaining cases.

The incidence of listeriosis declines each year probably due to better surveillance and reporting of cases. Between 1996 and 2006, there was a 36 % decline in reported cases.

### Risk Groups

The groups most at-risk for serious disease are:

- Pregnant women and their fetuses,
- Immunocompromised persons,
- The elderly

## Diagnosis

Diagnosis of listeriosis from stool specimens is difficult since it is very difficult to recover the organism from this type of specimen. It might also be added at this time that the examination of food products is also difficult and time-consuming.

Blood and cerebrospinal fluid (CSF) cultures are often quite useful. Blood cultures are usually positive in about 75 % of individuals with CNS infections. Just about 100 % of these individuals will have a positive CSF culture.

There are several selective *Listeria* media available and colonies from them can be identified as *L. monocytogenes* using tumbling motility in a wet preparation, gram-staining characteristics and several biochemical reactions.

## Treatment

Ampicillin, trimethoprim-sulfamethoxazole (Bactrim®) and chloramphenicol can be used for treatment. These antimicrobials are usually administered intravenously.

## Infection Control and Prevention

The **best** way to prevent listeriosis is by employing safe handling of food products and thorough cooking.

Here are some of the steps that can be taken to prevent listeriosis:

- Cook all raw food thoroughly,
- Wash raw vegetables,
- Avoid consumption of raw (unpasteurized) milk or milk products,
- Wash cutting boards and kitchen utensils thoroughly after they have been used with uncooked food,
- Wash your hands thoroughly after handling uncooked food,
- Heat all left-over and "warm-and-heat" foods (such as hot dogs) until they are steaming hot,
- Cook all food to safe internal temperature.

In the case of pregnant women and immunocompromised individuals, soft cheeses such as feta, Brie, bleu and Camembert should be avoided. Cottage cheese and yogurt are usually safe.

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## Selected References

Centers for Disease Control and Prevention. 2011. Listeriosis: General Information. Click [here](#) to go to complete article.

Centers for Disease Control and Prevention. 2011. Listeriosis: Technical Information. [Click [here](#) to go to complete article].

Ooi, S.T. and B. Lorber. 2005. Gastroenteritis due to *Listeria monocytogenes*. *Clinical Infectious Diseases* **40**: 1327-1332.

Ramaswamy, V. *et al.* 2007. *Listeria* - review of epidemiology and patho-

genesis. *Journal of Microbiology, Immunology and Infection* 40: 4-13 [Click [here](#) to go to abstract].

Todar, K. 2008. *Todar's Online Textbook of Bacteriology*. Chapter on *Listeria monocytogenes*. [Click [here](#) to go to chapter].

U.S. Food and Drug Administration. 2009. *Bad Bug Book: Foodborne pathogenic microorganisms and natural toxins handbook*. *Listeria monocytogenes*. [Click [here](#) to go to chapter].

## NEW FEATURE!

### Need Assistance with Infectious Disease Issues?

We are the world's leading provider of diagnostics testing services with a medical and scientific staff of approximately 900 MDs and PhDs possessing considerable experience in infectious disease, infection control and clinical microbiology.

Through a new service, we offer you access to our experience and expertise.

If you have a question in any of these areas, please feel free to contact us by email.

In your email, state your question as clearly as possible. Also, please furnish us with your name, position, affiliation, phone number and email address. All requests will be kept confidential!

Contact us by clicking [here](#)!

Thank you for letting us be of assistance to you!

## Other Infectious Disease News

### A Variant of *Listeria monocytogenes* that can attack Cardiac Cells

Just about the time the Editor finished putting this month's feature article together on Listeriosis, a paper appeared in the *Journal of Medical Microbiology* concerning heart infections associated with *L. monocytogenes*.

It appears that a subpopulation of *L. monocytogenes* has begun to emerge that has an increased ability to attack heart muscle. That might mean that patients who would normally only have a mild case of gastroenteritis as a result of infection may end up expiring from a cardiac infection.

Alonzo, F. *et al.* 2011. Evidence for subpopulations of *Listeria monocytogenes* with enhanced invasion of cardiac cells. *Journal of Medical Microbiology* Available on-line before publication. [Click [here](#) to go to abstract].

### CDC issues Management and Prevention Guidelines for Norovirus Infections

This 13-page report is worth reading if you are an infection control practitioner or epidemiologist. There are many important and pertinent pieces of information to be gleaned from it. Unfortunately, it is too long and space does not permit thorough coverage of it.

Listed below are key points that CDC has made with regards to the investigation and response to norovirus out-breaks:

- Initiate investigations promptly, including collection of clinical and epidemiologic information,

to help identify predominant mode of transmission and possible source,

- Promote good hand hygiene, including frequent washing with soap and running water for a minimum of 20 seconds. If available, alcohol-based hand sanitizers ( $\geq 70\%$  ethanol) can be used as an adjunct between proper handwashings but should not be considered a substitute for soap and water handwashing,



Antique handwashing sign from the Minnesota Department of Health  
Courtesy of CDC

- **Exclude** ill staff in certain positions (*e.g.* food, childcare and patient-care workers) until 48 to 72 hours **after** symptom resolution. In closed or institutional settings (*e.g.* long-term care facilities, hospitals and cruise ships), isolate ill residents, patients and passengers until 24 to 48 hours after symptom resolution. In licensed food establishments, approval from the local regulatory authority might be necessary before reinstating a food employee following a required exclusion,
- **Reinforce** effective preventive controls and employee practices (*e.g.* elimination of bare-hand contact with ready-to-eat foods and proper cleaning and sanitizing of equipment and surfaces),
- After initial cleaning to remove soiling, disinfect contaminated environmental surfaces using a chlorine bleach solution with a concentration of 1,000 to 5,000 ppm (1:50 to 1:10 dilution of household bleach [5.25 %

sodium hypochlorite] or other Environmental Protection Agency (EPA)-approved disinfectant\*. In healthcare settings, cleaning products and disinfectants used should be EPA-registered and have label claims for use in health care; personnel performing environmental services should adhere to the manufacturer's instructions for dilution, application and contact time,

- Collect whole stool specimens from at least five persons during the acute phase of illness (< 72 hours from onset) for diagnosis by TaqMan-based real-time reverse-transcription-PCR (RT-qPCR), performing genotyping on norovirus-positive specimens and report results to CDC via CalciNet (CDC's electronic norovirus outbreak surveillance network),
- Report all outbreaks of acute gastroenteritis to state and local health departments, in accordance with local regulations and to CDC via the National Outbreak Reporting System (NORS).

\*Agents registered as effective against norovirus by EPA are available at the website and can be accessed by clicking [here](#).

There are a number of other salient facts in this report that should be brought to your attention as follows:

- Noroviruses are the predominant cause of gastroenteritis outbreaks worldwide. In the U.S. and European countries, approximately 50 % of all reported outbreaks are caused by noroviruses,
- They are now recognized as the leading cause of foodborne illness in the U.S. accounting for about 35 % of all outbreaks reported to CDC during 2006-2007,
- Healthcare facilities, including nursing homes and hospitals, are the **most commonly** reported

settings of norovirus outbreaks in this country and other industrialized nations.

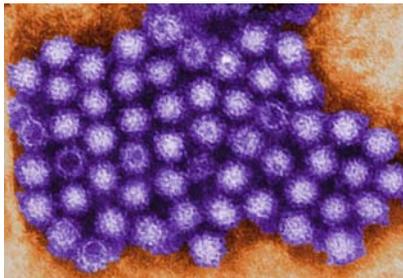
Centers for Disease Control 2011. Updated Norovirus Outbreak Management and Disease Prevention Guidelines. *Morbidity and Mortality Weekly Report* **60(RR03)**: 1-13 [click [here](#) to go to complete report].

### **Testing Available from Quest Diagnostics for Norovirus**

At present, Quest Diagnostics has two tests available for the detection of Norovirus:

**Norovirus RNA, RT-PCR** - requires a frozen specimen in a sterile, plastic, leak-proof container,

**Norovirus, EIA, Stool** - requires a frozen specimen in a sterile, plastic, leak-proof container.



Transmission electron micrograph (TEM) of Norovirus particles showing some of the internal structures of the virus  
Courtesy of CDC

For more information concerning these tests including test codes for your local area, turnaround times, etc., please contact your local Quest Diagnostics Service Representative.

## **Norovirus Infections and Alcohol-based Hand Sanitizers**

At "Preventive Medicine 2011" in San Antonio, Texas, Dr. David Blaney from the Centers for Disease Control and Prevention reported on a study carried out over a three-year period of time to determine what the risk factors were for Norovirus outbreaks in long term care facilities in New England.

Some of the risk factors considered during the study were:

- Close living quarters,
- Shared toilet facilities,
- Resident incontinence,
- Poor hygiene resulting from dementia or physical disabilities among residents,
- Use of alcohol-based hand sanitizers by staff.

The **greatest risk** factor turned out to be the use of alcohol-based hand sanitizers over good, effective hand hygiene with soap and water.

Preventive Medicine 2011. Annual Meeting of the American College of Preventive Medicine. Presented February 18, 2011, San Antonio, TX.

## **How Many Healthcare-acquired Infections (HAIs) could be prevented?**

Researchers at the University of Pennsylvania have estimated how many lives (and dollars) would be saved if "**best practices**" in infection prevention and control were applied to all U.S. hospitals.

Below is a summary of the estimates that came out of this study:

- Catheter-associated bloodstream infections:
  - 5,520 to 20,329 lives saved annually
  - Would save from \$ 960 million to \$ 18.2 billion annually
- Ventilator-associated pneumonias:
  - 13,667 to 19,782 lives saved annually
  - Would save from \$ 2.19 billion to \$ 3.17 billion annually

- Catheter-associated urinary tract infections:
  - 2,225 to 9,031 lives saved annually
  - Would save from \$ 115 million to \$ 1.82 billion annually
- Preventable surgical site infections:
  - 2,133 to 4,431 lives saved annually
  - Would save from \$ 166 million to \$ 345 million annually

Those are certainly incredible numbers. The report appeared in a credible, peer-reviewed journal so one has to give significant credence to this evaluation and the estimates coming from it.

Craig, A. *et al.* 2011. Estimated proportion of healthcare-acquired infections that are reasonably preventable and the related mortality and costs. *Infection Control and Hospital Epidemiology* **32**: 101-114 [click [here](#) to go to abstract].

### How to get to The Quest Diagnostics Patient Health Library

Click [here](#) to go to the section on our website dealing with the library information. When you get there, there are a number of ways you can search for information.

The information is well written and usually quite understandable. We are always adding or updating materials as it becomes available.

## Gyms and MRSA

Since it is a well known fact that methicillin-resistant *Staphylococcus aureus* (MRSA) can remain viable on

surfaces for extended periods of time,, there is always the worry that this can become a source of MRSA infections to gym users.

Researchers at the University of Florida College of Medicine collected specimens (swabbings) from three gyms. They tested gym mats, cardio equipment dumbbells and other gym equipment. The equipment was tested before and after cleaning and on at least three different occasions.

The result - no MRSA was isolated in any of the 240 specimens collected. Their conclusion was that MRSA transmission was more likely to occur when there is skin-to-skin contact (wrestling, basketball, etc.) than would be the case in skin-to-surface contact.

Ryan, K.J. *et al.* 2011. Are gymnasium equipment surfaces a source of staphylococcal infections in the community. *American Journal of Infection Control* **39**: 148-150 [click [here](#) to go to brief review]

## Asthma and Farm Kids

It's a well established fact that kids who grow up on farms have a significantly lower chance of developing asthma that kids were basically raised in the same area but not on a farm.

Is it all that good fresh air and exercise? Investigators think not! They think now that it is due to the constant exposure of children on farms to a much wider range of bacteria and fungi in the barnyard.

Investigators at the University of Munich in Germany are trying to identify the organism or fungus that may lead to this protective effect. That could lead to a real breakthrough in the prevention of asthma.

Ege, M.J. *et al.* 2011. Exposure to environmental microorganism and childhood asthma. *New England Journal of Medicine* **364**: 701-709 [click [here](#) to go to abstract].

## News Credits

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## Chlorhexidine and Healthcare-acquired Infections (HAIs)

Chlorhexidine gluconate (sold as Hibiclens® and Luroscrub®) is a well known antiseptic that has been shown to reduce the risk of HAIs (such as MRSA and VRE) in patients in intensive care units. In conjunction with the application of nasal mupirocin (Bactroban®), it has been demonstrated to eliminate MRSA carriage in a significant percent of patients.

This writer went in for some minor knee surgery a month ago and was

required (at an outpatient surgical center) to wash down with chlorhexidine the night before surgery. Even if they had not required it, he would have still done it.

Investigators at Rhode Island Hospital recently studied a group of 7,699 patients admitted to general medicine units who were given daily chlorhexidine baths. The incidence of HAI's (MRSA and VRE) in this group was compared to a control group of 7,102 patients who were just given daily soap and water baths.

The result was a 64 % **decrease** in the risk of acquiring an HAI.

Cost of 8 oz of chlorhexidine scrub = \$ 11

Cost of treating MRSA infection (including isolation, etc.) = thousands.

Kassakian, S.Z. *et al.* 2011. Impact of chlorhexidine bathing on hospital-acquired infections among general medical patients. *Infection Control and Hospital Epidemiology* **32**: 238-242. [Click [here](#) to go to abstract].

## Crack Cocaine Use and Tuberculosis

From 2006 to 2007, British Columbia experienced a rash of tuberculosis cases. When they looked at the patients' "social networking" (*i.e.* friends, contacts, *etc.*) and the genome of the two strains of *M. tuberculosis* involved, they found that the common denominator appeared to be crack cocaine use!

The researchers referred to these infected crack users as "super-spreaders"! Most lived in transient living conditions, used crack cocaine (61 %) or alcohol (66 %)

Gardy, J. *et al.* 2011 Whole-genome sequencing and social-network analysis of a tuberculosis outbreak. *New England Journal of Medicine* **364**: 730-739 [click [here](#) to go to article]

## The Previous Bed Holder and *Clostridium difficile*

Researchers at the University of Michigan recently investigated the effect that a patient with *C. difficile* infection (CDI) in an ICU unit would have on the next patient in the same bed.

They examined the records of almost two thousand ICU patients and found that 134 acquired a *C. difficile* infection during their hospital stay. 11 % were in beds where the prior occupant had a CDI, whereas 4.6 % were in beds where the prior patient did not have a CDI. That's over double the rate and the results were highly significant.

The investigators point out the role that the hospital environment plays in the transmission of *C. difficile* (and other HAIs) and need for improved disinfection practices.

Shaughnessy, M.K. *et al.* 2011. Evaluation of hospital room assignment and acquisition of *Clostridium difficile* infection. *Infection Control and Hospital Epidemiology* **32**: 201-206 [Click [here](#) for abstract].

## The Incidence of Community-acquired Pneumonia is dropping

Investigators at Massachusetts General Hospital evaluated over two million cases of community-acquired pneumonia (CAP) that occurred between 1987 and 2005 using Medicare claims. During this period of time, the number of cases decreased from 13.5 % to 9.7 % - a relative reduction of 28.1 %.

The investigators attribute this decrease to the increased use of influenza and pneumococcal vaccines as well as to improved treatment guidelines.

Ruhnke, G.W. *et al.* 2011. Marked reduction in 30-day mortality among elderly patients with community-acquired

pneumonia. *American Journal of Medicine* **124**: 171-178 [Click [here](#) to go to abstract]

### Free CME credits

**Hepatitis - the next opportunity for the HIV treater** - Click [here](#) to go to free CME/CEU opportunity on MedPage Today.

**Norovirus Outbreak Management and Disease Prevention - Updated CDC Guidelines.** Click [here](#) to go to free CME/CEU opportunity at CDC.

**General Recommendations on Immunization: Recommendations of ACIP.** Click [here](#) to go to free CME/CEU opportunity at CDC

## New Tests Available from Quest Diagnostics

### BK Virus DNA, Quantitative Real-Time PCR, CSF

#### Clinical Significance

This virus is a member of the Polyoma-virus family and was first described in 1971 when it was isolated from a patient with the initials "BK".

This virus rarely causes disease and most cases are asymptomatic. If there are any symptoms, they tend to be mild and confined to the respiratory tract. It has been estimated that roughly 80 % of the population carries this virus in a latent form.

The problem arises when patients undergoing renal transplants receive immunosuppressive therapy and develop a disease called BK virus nephropathy

### **Specimen Required and Transport**

0.7 mL of CSF in a sterile, leak-proof container is required. The specimen should be frozen but refrigerated specimens are stable for 7 days and non-refrigerated ones for 48 hours.

For specific information concerning collection, transportation and interpretation of test results from these results, the reader is advised to contact you Quest Diagnostics Service Representative

### **Reporting**

The test is run daily at Quest Diagnostics Nichols Institute, Chantilly, and Focus Diagnostics, Inc. Reports are usually available after one day. The reference range for this test is < 500 copies/mL

### **CPT Code**

87799

The CPT codes provided for these assays are based on AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions concerning coding to the payer being billed

## **JC Virus DNA Testing**

### **Clinical Significance**

The BK virus was discovered in 1971 from a patient with the initials "BK" who had progressive multifocal leukoencephalopathy (PML). The virus only seems to cause PML and other diseases in patients who are either immunodeficient (*i.e.* AIDS) or immunosuppressed.

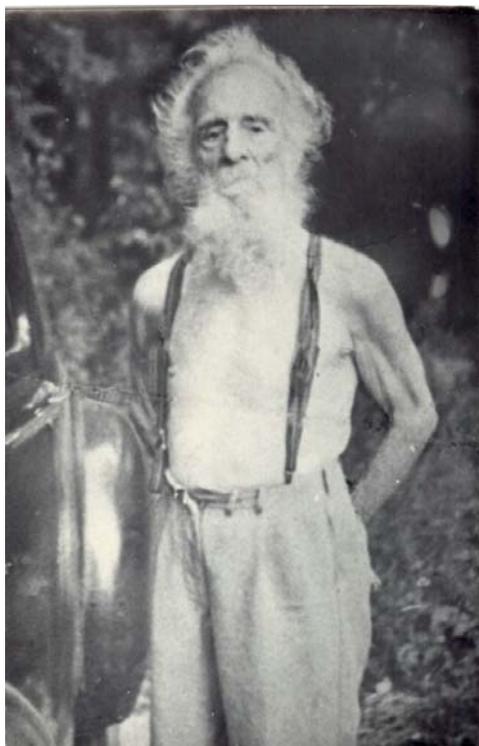
The BK virus appears to be quite prevalent in the general population and approximately 70 to 90 % of the population have been exposed to it. It is believed to be transmitted by contaminated water since there is a high concentration of the virus in urban sewage.

Quest Diagnostics now offers four tests for this virus. They all involve DNA testing by real-time PCR. There are qualitative and quantitative tests for both CSF and urine.

These tests are not yet approved for New York State patient testing at Focus Diagnostics, Inc.

### **Specimen Required, Transport and Interpretation of Results**

## From The Editor's Desk



## "OB Joyful" One of the First Hippies and Environmentalists

Growing up in Pittsfield, Massachusetts in the 1940s and 50s, I would often see this very strange man walking down the main street. Everyone called him "*OB Joyful*" though his real name was Albert Franklin Tyler, though I never heard him referred to by that name when I was growing up.

OB would wear a long dirty tan trench coat that was many sizes too big for him. He would wrap it around himself and tie it with a rope. Most of the time, he went without shoes or wore rubbers without the shoes! He always carried a small cardboard box tied up with rope under his arm. In this box, he carried his bible and a checker/chess set. People claimed to have seen OB walking across one of the local lakes barefooted in a wind when the temperature was down to  $-35^{\circ}$  (Those were the "good old days"!).

OB was incredibly literate, well read and could converse intelligently on just about any subject. According to the records, he was a graduate of Harvard University.

Back in the 1920s and 30s, OB worked as a door to door peddler of produce which he grew in his own garden. He was a strict vegetarian and later in life wouldn't even drink milk since he claimed "it tasted of the bovine"! Neighbors who knew him began to wonder about his eating habits since he and his family (a wife and three children) were always in the best of health!

Somewhere along the line, he came to believe that cutting your hair would sap your strength and he stopped cutting his. He would wrap his hair around nails to make it a little bit more manageable.

OB died in 1961 at the age of 89 never having a sick day in his life!



Above

A late 1920s picture of OB in his model T wagon which had been cut back so far that the only thing left was the frame, a seat and a steering wheel

To The Left

A recent wall painting in Northampton showing OB in front of his model T cranking it to start. The only problem here is that he had long ago stopped driving this vehicle before he reached the age he is in this scene!

