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# Rollers Revisited

The need for speed may force superintendents to reconsider rollers. Can they make a comeback?

BY FRANK H. ANDORKA JR.,  
MANAGING EDITOR

Superintendents who work to balance the golfer's desire for fast greens with healthy turf should consider rolling their greens as an alternative to lowering mowing heights.

Though superintendents manually rolled greens 40 years ago, mechanical rolling just came to the United States in the mid-1980s, says George Hamilton, a senior lecturer at Penn State University who researched the process in the early 1990s.

Hamilton says Australian companies produced the first mechanical rollers to smooth lawn bowling courts there. Then Australian superintendents began using them on their greens, and the companies recognized the business opportunity that American golf courses presented for them. When the first machines reached American golf courses, superintendents readily integrated them into their maintenance regimens.

To roll, a superintendent uses a machine that contains a heavy metal drum and rides it across the green. The roller, which applies 6 pounds per square inch (psi) of pressure on the turf, flattens the grass. (By comparison, the atmosphere presses 14.7 psi on an object at sea level.) Since a golf ball loses less momentum traveling over rolled turf, it travels further, Hamilton says.

"Think of putting on a shag carpet," Hamilton says. "Then think of putting on a shag carpet that has been ironed flat. That's the difference you see between a green that hasn't been rolled and one that has."

## Full-speed ahead

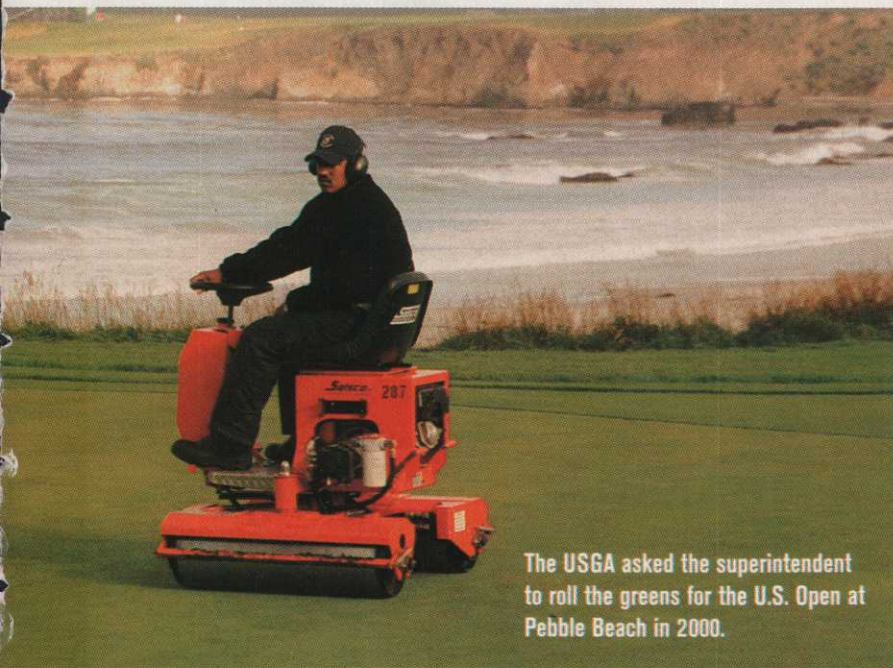
Rolling greens two to three times a week, combined with mowing on the other days, allows superintendents to mow greens at higher heights and still maintain speed, says John Foy, director of the Florida Region of the USGA's Green Section.

"You shouldn't mow at low heights if your greens have intense contours or consist of older varieties of grass," Foy says. "When you mow grass low, you produce a shallower root system that puts the grass at risk of disease and stress. Rolling allows you to maintain the speed golfers expect without sacrificing the health of the plant."

Smoother greens are also truer, says Matt Nelson, an agronomist in the Northwest Region of the USGA Green Section. Nelson says an aggressive rolling program provides an extra 6 inches to 1.5 feet to a regular Stimpmeter rating.

"Rolling is also helpful if you have a green under repair or one you've recently aerified," Nelson says. "In those cases, you can avoid some golfer complaints by creating a smooth surface for them to putt on."

*Continued on page 44*



The USGA asked the superintendent to roll the greens for the U.S. Open at Pebble Beach in 2000.

USGA

Continued from page 43

## Concerns about compaction

Experts say superintendents do *not* have to worry about compaction if they roll their greens. Hamilton, Chris Hartwiger, an agronomist in the USGA's Southeast Region Green Section, and Thom Nikolai, a turfgrass education specialist from

### Superintendents Speak Out

*Golfdom* e-mailed superintendents across the country asking them about their rolling practices. Here are some of their responses:

I roll our greens every Thursday (men's day) after we double-cut with walking greens mowers. I also roll greens during our men's member-member, club championship, member-guest and the week after we aerify our greens.

It does help our green speed a little, but it's really more of a public relations thing for me. The good players like to talk to me about it during men's day or the special events, so even if it didn't do anything noticeable, I would still do it.

**Steve Hammon**

**Traverse City G & CC**

**Traverse City, Mich.**

I roll two to three times per week and it benefits the putting surfaces tremendously. It improves the smoothness and actually has an effect on turf health if used properly. I roll right out of the gates in the spring and roll my greens until the end of the season. It helps eliminate the need for constant double-cutting on a regular basis.

**Tony Girardi, CGCS**

**Rockrimmon CC**

**Stamford, Conn.**

We typically roll greens once per week instead of mowing, and nobody (except my staff) notices. By rolling once per week, it allows us to free up three people for topdressing and aerifying.

**Troy Russell**

**Bandon Dunes GC**

**Bandon, Ore.**

Michigan State University, each conducted two year studies in the early 1990s to determine how much rolling turf could withstand. The studies concluded that the practice causes no compaction, Hartwiger says.

"I rolled my test plots for 70 straight days and saw no compaction," Hartwiger says. "Mechanical wear from the roller killed some of the grass, but I don't know anyone who would roll 70 straight days in real life."

His experiment shows that superintendents can roll two to three times a week during high stress periods, and up to four times a week during low-stress periods, without damaging the turf.

Hamilton says superintendents who have installed new bentgrasses and maintain low mowing heights shouldn't roll their greens.

"You can't roll if you're going to mow at extremely low heights," Hamilton says. "Stress is cumulative, and if you combine the two stresses, you'll kill the grass."

### Popularity waning

Despite the increasing desire for speed, Hamilton says he sees fewer superintendents employing rollers these days.

The advent of sophisticated triplex mowers, combined with grass varieties that superintendents can mow at ultra-low heights, explain a portion of the roller's receding popularity, Foy says. Rolling is also labor intensive, with one or two crew members dedicated to doing the job, Nelson says.

"It's a slow process," Nelson says. "For most courses, particularly those watching their budgets, they're only trying to stay one step ahead of the golfers. They don't have the labor to roll on a regular basis."

Then there's the cost of an additional piece of equipment. Stand-alone mechanized rollers cost between \$5,000 and \$10,000, while triplex mower attachments cost only slightly less, Hamilton says.

While rolling is an important tool in the quest for more speed, superintendents can't treat it as their only solution to the problem. The effects only last

24 hours, says David Oatis, director of the Northeast Division of the USGA Green Section.

"You can get a sharp increase in speed for a short time," Oatis says. "You won't see any long-term effects, however."

Nelson says he doesn't expect widespread rolling to catch on, but Hartwiger is far more optimistic.

"Rolling adds another important weapon in the superintendent's arsenal in the fight to balance speed and health of the turf," Hartwiger says. "Putting greens are the most important part of a golf course, and you should use all the tools available to keep them in good shape. That's why rolling will make a comeback." ■

### For more information on rollers, see these companies:

#### Web sites

[www.siouxfan.com/broyhill](http://www.siouxfan.com/broyhill) — Broyhill (402-987-3412)

[www.carefreetire.com](http://www.carefreetire.com) — Carefree Tire (323-249-7500)

[www.gandy.net](http://www.gandy.net) — Gandy Co. (800-443-2476)

[www.hudsonstar.com](http://www.hudsonstar.com) — Hudson Sales & Engineering (765-362-6404)

[www.krigger.com](http://www.krigger.com) — Krigger & Co. (800-252-8873)

[www.salsco.com](http://www.salsco.com) — Salsco (203-271-1682)

[www.smithco.com](http://www.smithco.com) — Smithco Co. (610-688-4009)

[www.true-surface.com](http://www.true-surface.com) — Turfline (636-441-8588)

[www.greensiron.com](http://www.greensiron.com) — Wood Bay Enterprises (800-661-4942)

[www.aerway.com](http://www.aerway.com) — AerWay/Holland Equipment Ltd.\* (800-457-8310)

[www.ardington.net](http://www.ardington.net) — Ardington Grinder Products\* (780-835-8241)

[www.sportsturfmagic.com](http://www.sportsturfmagic.com) — Bannerman Ltd.\* (416-247-7875)

#### Other companies:

Diversified Manufacturing (716-434-5585)

\*Canadian companies



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# Beware of Lyme Disease

The risk of contracting the tick-borne ailment is higher than you think.

Here's how to prevent getting it **BY ROBIN SUTTELL**



PHOTODISC

## Living Well

**PART 4:**

### **LYME DISEASE**

#### **Living Well Series**

This is the final installment of the Living Well series.

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**June** – *Safety on the Golf Course and in the Maintenance Facility.*

**July** – *Career and Family – The Balancing Act*

**August** – *Dealing with the Threat of Skin Cancer*

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**W**hen strolling across the back nine of Orchard Creek GC in Altamont, N.Y., don't be surprised to see crews wearing "space-age" Tyvek coveralls while working in brushy areas.

Superintendent Peter Cure expects these polypropylene suits to protect his crew members against a number of things: poison ivy, poison oak and, most importantly, deer ticks — the primary carriers of Lyme disease. In New York, as well as most of the East Coast and a large portion of the Great Lakes region, the risk of contracting the debilitating, tick-borne ailment runs high because of the large deer and, consequently, deer-tick populations. In the United States, Lyme disease is mostly localized to states in the northeastern, mid-Atlantic, and upper north-central regions, as well as several counties in northwestern California.

Those who live or work in residential areas surrounded by woods or overgrown brush infested by vector ticks are at risk of getting Lyme disease, particularly those who engage in outdoor occupations. Therefore, the risk for superintendents is real.

"It's environmental work, and you can't eliminate the risk entirely, but there are things you

can do to lessen it," Cure says, adding that the slippery material of the Tyvek coveralls prevents ticks from clinging to workers' clothing and moving to their skin.

#### **Signs and symptoms**

Early warning symptoms of Lyme disease include flu-like feelings of headache, stiff neck, fever, muscle aches and fatigue, as well as a unique enlarging bull's-eye-like rash known as erythema migrans (EM) at the site of the tick bite days to weeks after the bite. On dark-skinned people, this rash resembles a bruise.

Eighteen months ago, Cure started having some of the flu-like symptoms. He took two Lyme disease tests, but both turned out negative. While his aches and fatigue eventually went away, he said he could imagine how someone suffering from Lyme disease would feel.

"It was quite painful," he says, adding that a friend of his had Lyme disease and could attest to the severity of the symptoms.

If not diagnosed early, the effects of Lyme disease can be devastating. Consider PGA golfer Tim Simpson's case. The disease didn't kill him, but it derailed his promising career.

Simpson, who led the 1990 tour with 12 top-10 finishes, went turkey hunting in the



Workers at Orchard Creek GC don't work in bushy areas without donning slippery Tyvek coveralls to prevent ticks from latching on to their clothes and skin.

WILL WALDRON

spring of 1991. One morning during the trip, he woke covered in ticks. Within days, he had a fever, the shakes and overwhelming fatigue. He didn't think much of it at first.

The symptoms persisted, evolving into muscular weakness, numbness and tingling. They started to affect his golf game. After a year of visiting physicians and specialists, the doctors diagnosed Simpson with Lyme disease.

He played throughout 1991, but his illness forced him to leave the tour in April 1992 after only one round in the Greater Greensboro Open.

"I should have taken the whole year off in 1992 and taken the IV drips for it and the full medication because it's a disease that can get worse and worse," Simpson told *Gannett News Service* in a 1997 interview.

Simpson, who rejoined the tour in 1997 after attending Qualifying School, still suffers from tremors that keep his game from being what it was.

### Disease transmission

Corkscrew-shaped bacteria transmitted by the bite of deer ticks and western blacklegged ticks cause Lyme disease.

Ticks favor a moist, shaded environment, es-

pecially that provided by leaf litter and low-lying vegetation in wooded, brushy or overgrown grassy habitats. The easiest way to prevent contact with deer ticks and to reduce the possibility of infection is to avoid these areas.

At Hazeltine National GC in Chaska, Minn., which is near the state's highest risk area for deer tick infestation, workers make an effort to steer clear of tick-friendly zones, says certified superintendent James Nicol.

"We stay out of the wooded areas and the high grassy areas that are typically known as no-maintenance areas away from the fairways," Nicol says, noting that these no-maintenance zones have tick activity.

Deer ticks live for two years. The eggs hatch into larva, which then molt into nymphs. Ticks transmit most cases of Lyme disease during this phase when they feed, typically between May and July.

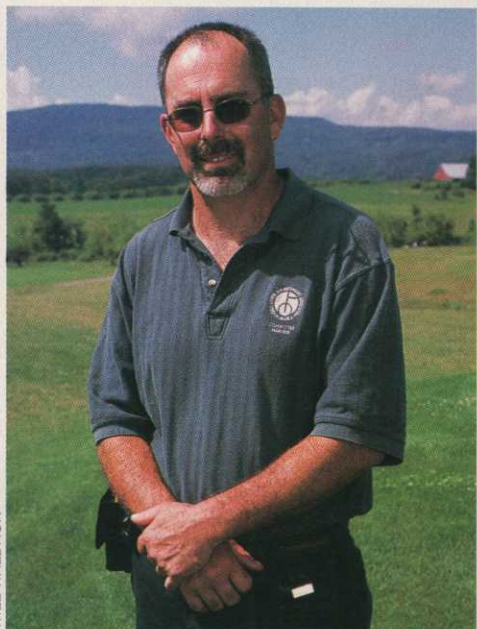
In the second year, the larger adult male and

*Continued on page 48*



James Nicol warns others to check themselves for ticks if they've been in susceptible areas. "You always have to be aware," he says.

## Beware of Lyme Disease



WILL WALDRON

**'You can't eliminate the risk entirely, but there are things you can do to lessen it.'**

PETER CURE  
SUPERINTENDENT

*Continued from page 47*  
female ticks feed in late fall and early spring. They are easier to see and remove than ticks in the nymph stage, which is good because adult ticks also can transmit infection.

Statistics from the National Centers for Disease Control and Prevention (CDC) in Atlanta reveal the number of annually reported cases of Lyme disease in the United States has increased about 25-fold since national surveillance began in 1982. A total of 16,019 cases were reported to the CDC in 1999.

Ninety-two percent of those cases were in nine states, most in the Northeast, including New York and Connecticut. Since 1980, more than 160,600 cases have been reported.

### Protect yourself

The CDC advises individuals who are exposed to tick infested areas to wear light-colored

clothing so ticks can be spotted more easily and removed before becoming attached. Wearing long-sleeved shirts and tucking pants into socks or boot tops may help keep ticks from reaching the skin. Ticks are usually located close to the ground, so wearing high rubber boots provides additional protection.

That's why Pete Cure and his team rely on the Tyvek coveralls if they have to work in brushy areas on the course. They're light colored, impenetrable and tight fitting around wrists and ankles.

Application of insect repellents containing less than 50 percent diethyl toluamide (DEET) to clothes and exposed skin, and permethrin — which kills ticks on contact — to clothes, should also help reduce the risk of tick attachment, according to the CDC.

If you are outside regularly in areas that could harbor deer ticks, daily skin checks for them (including scalp and hairline) and prompt removal of the parasite will help prevent infection, CDC experts advise. Embedded ticks should be removed using fine-tipped tweezers. Do not use petroleum jelly, a hot match or nail polish.

Instead follow this recommend procedure:

- Using tweezers, grasp the tick firmly and as closely to the skin as possible. With a steady

### Another Tick-borne Disease

Another tick-borne human illness has come to the forefront: Ehrlichiosis.

Ehrlichiosis is a newly recognized and potentially life-threatening disease. Since 1986, two types of human ehrlichiosis have been identified in the United States: human monocytic ehrlichiosis (HME) and human granulocytic ehrlichiosis (HGE). The illnesses differ in the types of white blood cells they attack — either monocytes or granulocytes.

Evidence suggests the lone star tick transmits HME, while the deer tick transmits HGE. In the United States, HME has been concentrated in the Southeast and South Central regions. HGE has been found mainly in the upper Midwest and Northeast states, but also in northern California.

Anyone can contract ehrlichiosis, although most cases have been in adults. The high-risk period is the same as Lyme disease — the spring and summer. People who spend time outside in tick-infested areas during these months are at increased risk for exposure.

The disease is similar to Rocky Mountain spotted fever and can be severe and life threatening. The most common symptoms are sudden high fever, tiredness, major muscle aches, severe headache, and, in some cases, rash. Symptoms generally appear three to 16 days after a tick bite.

Diagnosis is difficult, even in severe cases. Because diagnostic tests are not widely available, diagnosis is usually based on symptoms and a history of exposure to ticks. Special laboratory tests can detect recent infection with Ehrlichia bacteria.

Severely ill patients can develop abnormally low numbers of white blood cells, abnormally low numbers of platelets and kidney failure. Deaths have been reported for both HME and HGE. Like Lyme disease, ehrlichiosis can be treated with antibiotics.

*(Source: Association of State and Territorial Directors of Health Promotion and Public Health Education, Washington, D.C.)*



motion, pull the tick's body away from the skin. The tick's mouth parts may remain in the skin, but do not be alarmed. The bacteria that cause Lyme disease are contained in the tick's midgut, not its mouth.

■ Cleanse the area with an antiseptic.

In Chaska, Nicol says he and his staff don't cover up when working on the grounds, but they are aware of the potential risk. Nicol checks for ticks when he spends time near any of the potentially infested areas.

"I've known one person who has had Lyme disease, and whatever the disease is at its worst, she had it," Nicol says. "It really woke me up to it."

### Treatment options

Lyme disease is treatable with antibiotics, particularly in its early stages. Left untreated, however, the disease can advance from early flu-like symptoms to painful and permanent damage, according to the CDC.

The LYMERix vaccine, approved by the U.S. Food and Drug Administration in 1998, is effective in the prevention of symptomatic Lyme disease diagnosed through a blood test and the evident symptoms. It can also be used to treat an asymptomatic occurrence of the disease, which is found only through blood testing.

Medical experts say immunization with LYMERix, manufactured by GlaxoSmithKlineWellcome, should be decided on a case-by-case basis.

The latest development in Lyme disease treatment and prevention comes out of the studies released in June in the *New England Journal of Medicine*. Findings from these studies show that a single, 200-milligram dose of the antibiotic doxycycline given within 72 hours after a deer tick bite may prevent Lyme disease.

However, the doxycycline treatment isn't for everyone, cautions Eugene D. Shapiro of the Yale University School of Medicine in New Haven, Conn.

In cases in which the bite occurs in an area where the incidence of Lyme disease is low and in cases in which the tick is not in the nymphal stage or is not partially engorged, then preventive treatment may not be necessary. People who have received Lyme disease vaccine should also be at lower risk for such treatment, Shapiro says.

### The Take on Ticks

Ticks are not insects. They are parasites and members of the Arachnida class, which includes spiders, scorpions, daddy longlegs and mites.

Deer ticks are much smaller than common dog or cattle ticks, and are no bigger than a pinhead in larval and nymphal stages. It takes about two years for the tick to hatch from an egg, go through three stages, reproduce and then die.

A tick's specially barbed mouth, along with glue it produces, keep it firmly attached to its host during feeding. Deer ticks most frequently pick up bacteria, such as *B. burgdorferi* that



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causes Lyme disease, from the white-footed mouse or other small rodents. Not all ticks carry the Lyme disease bacteria.

In a handful of western states, the Western black-legged tick transmits Lyme disease.

Despite the medical breakthroughs, Nicol says caution should rule the day any time a superintendent goes to work outdoors.

"It's not just golf; it's everything outdoors," Nicol says. "I have it in the back of my mind, but I haven't changed my lifestyle because of it. If you've been in a susceptible area, you check yourself for them — period. You always have to be aware." ■

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*After researching this story, Suttell, a Cleveland-based free-lance writer, will never go camping again.*

### Lyme Disease Resources

The Lyme Disease Foundation  
<http://www.lyme.org>  
800-886-LYME

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The CDC Lyme Disease Home Page  
<http://www.cdc.gov/ncidod/dvbid/lyme/index.htm>

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Lyme Alliance  
<http://www.lymealliance.org>

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The Lyme Disease Association  
<http://www.lymediseaseassociation.org>  
888-366-6611

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The Lyme Disease Network  
<http://www.lymenet.org>

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The National Institute of Allergy and Infectious Diseases  
<http://www.niaid.nih.gov/publications/lyme/textonly.htm>

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