Clinical Potpourri for Your Life and Your Practice

Mosquitoes—What’s Good to Know About These Pests?

It’s been a rough year (and in most places it’s cooling off with relief in sight) for mosquitoes. Many of us can vividly recall an attack by a swarm of them—finding yourself bothered by the itching of those that actually successfully gained a meal from you.

While not promoting any particular company, the use of a mosquito reduction service (MRS) on your home property actually can make a big difference. We know these pests carry a variety of viruses and are well known and significant vectors for Zika, West Nile, malaria, and other health threats.

Interestingly mosquitoes are pretty much stay-at-home types in that they are very unlikely to travel more than 300 yards in their entire life. So, it’s likely that the bite(s) you received while reading or eating in your backyard came from a critter that was born on or near your yard. As it turns out those misting services from a MRS can in fact, make a real difference.

Given that there are more than 2,500 varieties of the critters, most being active in the very early morning and evening, many will “attack” midday as well. And if you are interested in macabre trivia imagine this: it would take a little over 1 million mosquitoes, sucking simultaneously, to drain the average human of blood. Crazy as this sounds, there are researchers who have volunteered to be bitten about their bodies for the sake of science. Here it’s been found that up to 9,000 bites per minute occur from a swarm of newly hatched mosquitoes. Let’s say that you’ve been tied to a tree in a mosquito infested woods and are descended on by a voracious horde of them. Doing the math, an average human who finds herself in this unfortunate circumstance could conceivably have their blood supply vanquished in about 2 hours.

Only the female mosquito seeks a blood meal with the male practicing a strict vegetarian diet, preferring nectar and plant juices to that flowing in your veins. They seek out prey with their compound eyes that occupy the majority of their head and obtain infrared images of heat waves emerging from the target’s body.

Two frequently asked questions are how many people die each year due to mosquitoes and can one get AIDS from a mosquito who recently obtained a blood meal from an AIDS-infected person? The answer to the first question is that somewhere in the vicinity of 1 million die each year due to mosquitoes and can one get AIDS from a mosquito who recently obtained a blood meal from an AIDS-infected person? The answer to the first question is that somewhere in the vicinity of 1 million die each year as a result of mosquito-borne infectious disease and HIV-infected humans have few viral particles in their bloodstream and the virus does not survive in the mosquito’s gut.

Thinking Positive About Getting Older May Have Some Health Benefits

It appears that a bias against getting older may have physical effects. When busy and distracted, doing activities that we love, we tend not to think about how old we are or the state of our knees, hips, shoulders, and backs. But during a dormant phase when our minds are not occupied, or after a glance in a mirror that reveals new wrinkles, we may just be feeling a little worse about life in general.

The ongoing field of research and clinical inquiry called “mind-body studies” is exploring and illuminating the way that our feelings about aging affect us physically. The World Health Organization (WHO) is involved in disseminating an international study of ageism—defined as discrimination toward the aged. Ageism has social and psychological attributes similar to racism and sexism. The report includes the complex implications that ageist attitudes affect the health and well-being of older people.

Research conducted by scientists at the Yale School of Public Health, reveals that something as simple as subliminal exposure to age-positive words can have quantifiable, positive mental effects on the aged, effects that are similar to those that are observed after a period of physical training. The researchers described a number of “negative age-related words,” a few of which are dying, Alzheimer’s, dementia, senile, confused, forgets and decline. Contrasting are “positive age-related words,” a few of these words follow: guidance, wise, alert, creative,
It seems to be wishful thinking that a simple change in mindset might have significant impact on the more than $700 billion we spend annually on Medicare, but that is exactly what those in the mind-body scientific community are suggesting. A more positive attitude toward aging may lead to improvements in memory, gait, balance, speed and what is termed the “will to live.”

The message appears to be that if a positive spin is put on our general view of aging there may be significant health benefits for those who are more than 65 years of age. This targeted demographic is the fastest-growing age group in America and the “mind-body” intervention is considered risk-averse, low cost, and is worth a try.

**Antibiotic-resistant Bacteria Cause a Heavy Burden of Infections, Deaths, and Disability-Adjusted Life Years Within 30 Countries in Europe**

We are well aware that bacteria continue to evolve to become resistant to certain antibiotics, with enormous consequences for those who experience bacterial infections. From an epidemiological perspective we also need to know the extent of the problem because we lack reliable data on how widespread antibiotic resistance really is, where it is occurring globally and whether there are particular populations that are more vulnerable.

Therefore, researchers from many different universities and organizations in Europe came together to estimate the burden of infections caused by antibiotic-resistant bacteria in 30 countries in the European Union and the European Economic Area.

In this highly ambitious undertaking, *infection burden* was defined as the number of cases of all types of infections caused by antibiotic-resistant bacteria, the number of deaths that were attributed to those specific antibiotic-resistant bacteria, and the years lost due to poor health, disability, or early death caused by these infections. The study focused on eight different types of antibiotic-resistant bacteria that are frequently found in blood or cerebrospinal fluid of infected patients. These included *Acinetobacter*, *Enterococcus faecalis*; *Enterococcus faecium*; *Escherichia coli*; *Klebsiella pneumoniae*; *Pseudomonas aeruginosa*; *Staphylococcus aureus* (MRSA); and *Streptococcus pneumoniae*.

Five types of infections caused by these were examined, including bloodstream infections, urinary tract infections, respiratory tract infections, surgical site infections, and “other” infections. In the year studied (2015) there were 671,689 cases of infection due to antibiotic-resistant bacteria, estimated to cause 33,110 deaths and 874,541 disability-adjusted life-years. This means that there were 131 antibiotic-resistant infections per 100,000 people and 6.44 deaths per 100,000 people in these countries. Of great interest was that infants less than 1 year of age and adults aged 65 years or older were the most likely demographics to experience the infections. The researchers also found that 63.5% of these antibiotic-resistant infections were associated with healthcare, showing that the majority of these infections occur in hospitals or other places that perform healthcare.

**Electric Hand Dryers in Restrooms Aren’t as Clean as You Think**

Those electric hand dryers you find in public bathrooms and exercise gym locker rooms have a long history—having first made their appearance before the Great Depression (1929). Originally developed as a convenient way to cut down on paper product waste, their utility continues to be debated. Today, there is a surprising amount of research underway to determine safety risks of electric hand dryers in public spaces. They may save paper and money, but are they associated with a lower risk of infectious organisms? We all know that hand-washing is one of humanity’s greatest public health achievements, and plays a vital role in preventing infectious disease transmission. So, it makes sense that researchers want to make sure that convenience isn’t coming at a cost to health.

Researchers at three separate hospitals in the United Kingdom, France, and Italy put this question to the test by sampling surfaces, dust, and air for bacteria in public restrooms using electric air dryers. The researchers swabbed surfaces such as sinks, counters, floors, doors, switches, and the outside of paper towel dispensers and electric dryers. The study’s methodology was excellent and what was found was that at all three study sites, bathrooms using the jet air dryers had much higher levels of bacteria compared to bathrooms with paper towels.

But dividing the data up by location made things a little more complex. In France, the hand dryer bathrooms had more resistant *Staphylococcus* on the dispensers, air, and doors while more resistant intestinal bacteria were found in the sink and dust. But, when paper towels were used, more Staph was found on the floor, sink, and dust and more intestinal bacteria was found on floors, sink, and dispensers. A similar pattern was seen in the UK bathroom. It is possible that in jet dryer bathrooms, visitors may shake their hands off before using the dryer, depositing bacteria on counters and floors. Dryers then expel bacteria into the air during the drying process.