University of California San Diego
Lab 1 – CMBB
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EMU 47
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Bacteria on a Spin Cycle Seat

We spend a lot of our free time getting healthy on a Spin Bikes, so it's only natural that we'd make them comfy and appealing. But sitting just beneath you, there's a legion of germs that live on your Spin Seat. As you begin to petal and the music starts to take over, **do you know what is lurking just under you?**

We examined the microscopic parts of an uncovered cycle seat via a study conducted by the University of California San Diego. These tests were conducted to get an understanding of how much bacteria riders are being exposed to and specifically what types of bacteria.

The purpose of this test was to discover the bacteria levels on a cycle seat. We then wanted to see if using a SeaCycle Sleeve would prevent bacteria from getting through the Sleeve.

This report was unbiased. It was conducted in a laboratory at the University of California San Diego with no members of the SeaCycle team present. All samples were taken at random and studied under a microscopic lens in a University of California San Diego laboratory.

Procedure

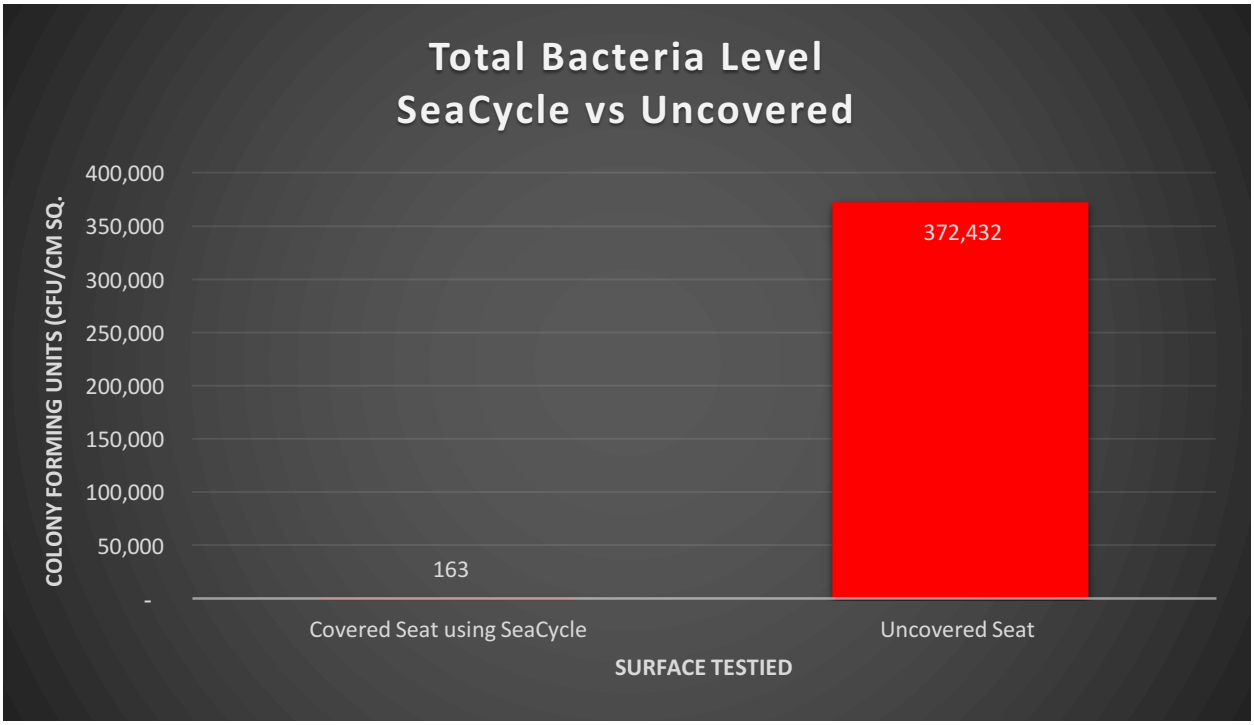
I. A Scientist took four swab samples of a random uncovered cycle seat.

II. The scientist then took four swab samples of the same seat, this time covered using a SeaCycle Sleeve (patent #62526617)
III. Laboratory tests were performed to **measure the levels of the following bacteria on an uncovered seat and a seat using a SeaCycle Sleeve; Cocci and Negative Rods**.
IV. In addition, the laboratory tested the total Colony Forming Units per square cm (CFU) of **bacteria for an uncovered seat vs. a seat covered using a SeaCycle Sleeve.**

Total Bacteria Levels

The total Colony Forming Units (CFU) of Bacteria measure the number of viable bacteria or fungal cells in a sample.

Surface	Total Bacteria (CFU)
SeaCycle Sleeve	163
Uncovered Seat	372,432



*Colony Forming Unit (CFU) is the unit used to estimate the viable bacteria or fungal cells in a sample.

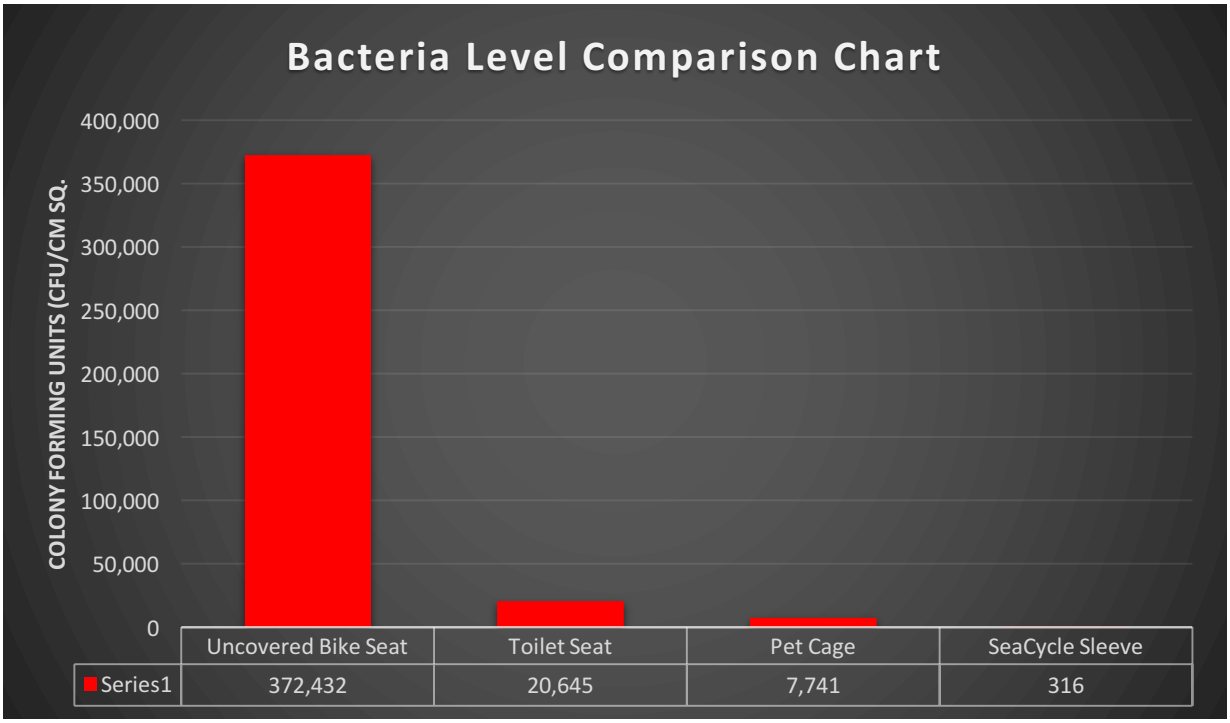
Results

- The **SeaCycle Sleeve protects spinners from 99.92% of the bacteria** nested on the uncovered seat.
- The **SeaCycle Sleeve was tested to have 2,285 times LESS bacteria** exposure than the uncovered seat.
- The **uncovered seat exposed users to 372,269 MORE CFU's of bacteria** than a cycle seat covered by a SeaCycle Sleeve.

Common Surface Comparison

As a comparison, we collected the CFU levels off the surface of a public school toilet seat and the floor of a pets' cage.

Surface	Total Bacteria (CFU)
Uncovered seat	**372,432**
Public School Toilet Seat	**20,645**
Pet Cage	**7,741**
Cycle Seat Covered by SeaCycle Sleeve	**316**



*Source: NSF.org – National Sanitation Foundation

Results

- The sample of an uncovered seat contained over 300,000 more CFU's of bacteria than a public school toilet seat or a pets' cage.
- **The SeaCycle Sleeve was the cleanest surface tested.**

Types of Bacteria Discovered on Seats

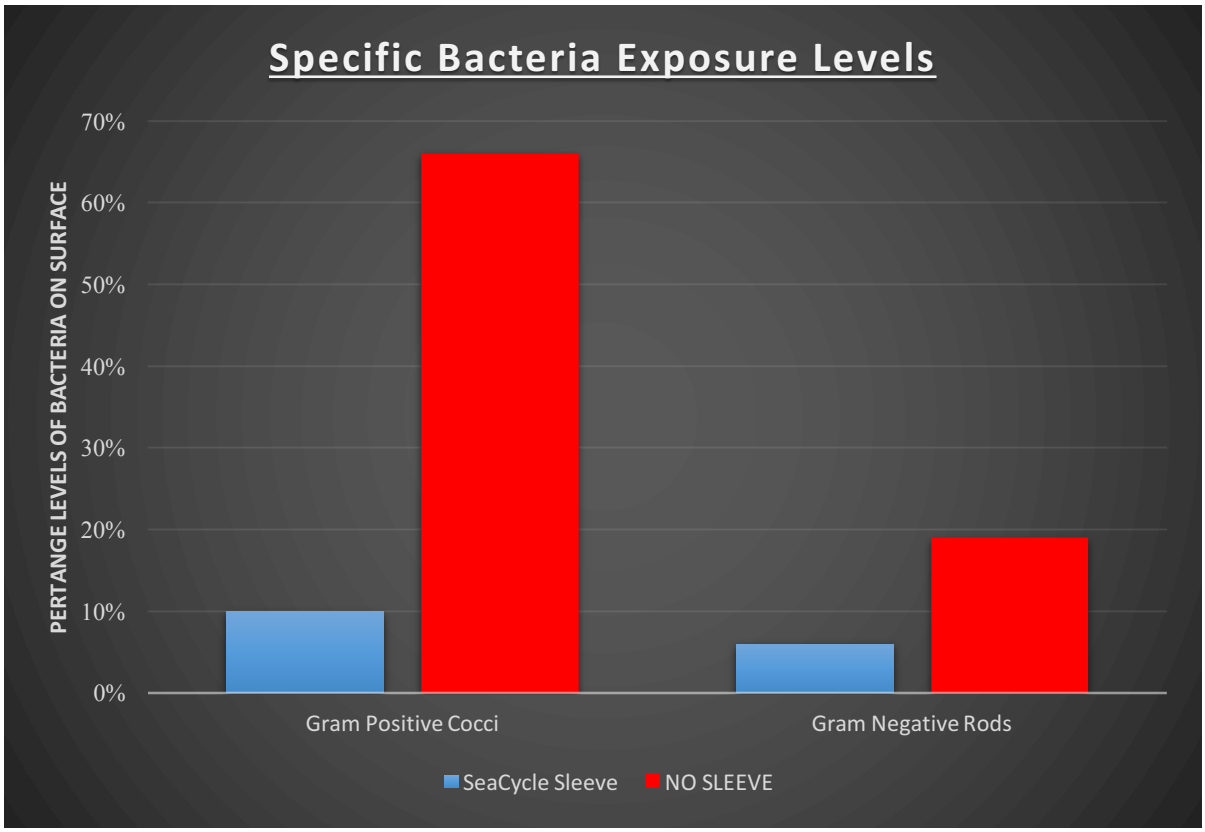
Laboratory tests were performed to measure the levels of the following bacteria; gram positive Cocci and Negative Rods.

Gram-negative bacteria or negative rods cause **infections including pneumonia, bloodstream infections, wound or surgical site infections, and meningitis in healthcare settings.** Gram-negative bacteria are resistant to multiple drugs and are increasingly resistant to most available antibiotics.
(*Center for Disease Control / cdc.gov)

Gram positive **Cocci** is a common bacterium that can cause **skin infections, pneumonia, endocarditis and osteomyelitis**. It commonly leads to abscess formation

In blue we see the bacteria level exposure to riders using a SeaCycle Sleeve. In red we see the bacteria levels exposure to riders NOT using a SeaCycle Sleeve.

	SeaCycle Sleeve	NO SLEEVE
Gram Positive Cocci	10%	66%
Gram Negative Rods	6%	19%



Results

- The results show that when a SeaCycle Sleeve is **NOT USED** riders are exposed to excessively more bacteria that can cause **skin infections, pneumonia, endocarditis, osteomyelitis, abscess formations, neonatal infection, cellulitis, food poisoning if ingested or mastitis or breast abscess in breast feeding mothers.**
  (This is illustrated on the left side of the X-axis titles "gram positive cocci")

- The results show that when SeaCycle Seat cover is **NOT USED** riders are exposed to excessively more bacteria that can cause infections including **pneumonia, urinary track infections, bloodstream infections, wound or surgical site infections, meningitis in healthcare settings, sexually transmitted disease and e. coli.**

(This is illustrated on the right side of the X-axis titles "gram positive cocci")

- The SeaCycle Sleeve protects riders from exposure to bacteria that can cause the following: **skin infections, pneumonia, endocarditis, osteomyelitis**, **abscess formations, neonatal infection, cellulitis, food poisoning if ingested or mastitis or breast abscess in breast feeding mothers, urinary track infections, bloodstream infections, wound or surgical site infections, meningitis in healthcare settings, sexually transmitted disease and e. coli.**

Conclusion

I. The SeaCycle Sleeve covers a cycle seat the sleeve dramatically reduces the amount of bacteria a rider is exposed to.
II. That data proved that an uncovered seat had 2,225 times more CFU's of bacteria than the surface of a SeaCycle Sleeve when the sleeve was used.
III. The bacteria is potentially harmful to humans which can lead to disease, infections and illness.