

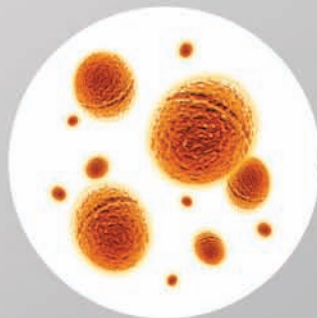
# Bib Chain Contamination Education and Bib-Eze Product Kit



*Corynebacterium*



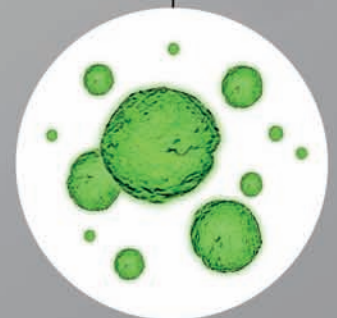
*Pseudomonas*



*Staphylococcus aureus*



*Escherichia coli*



*Staphylococcus saprophyticus*



Trust.Worthy.Innovation.

Dear Professional,

At DUX Dental our goal is to manufacture products that provide innovative solutions to problems dental offices face daily. The risk of bib chain cross-contamination is real and we understand that dental professionals want to do what is right for their patients at all costs. Because of that, we created Bib-Eze™ disposable bib holders. Bib-Eze replace traditional bib clips and bib chains in a dental office, allowing the patient and the dental worker to avoid cross-contamination risk. Further, we have created a product that doesn't add extra cost and also eases office efficiency.

Here's the economics behind the switch to Bib-Eze:

- The cost per use for Bib-Eze is on average \$0.05 (Box of 250 Bib-Eze retails for, on average, \$12.00)
- The cost per use for a disinfectant wipe to clean a chain or clip is on average \$0.06 (Top selling disinfectant wipes retail for around \$14.49 for 240 wipes or \$10.99 for 160 wipes)
- The math is simple - the cost to switch to Bib-Eze is comparable if not better than the current spend on wiping a chain or clip after each use

Bib-Eze is truly a product that an office can feel good adding to their daily routine:

- Improved patient safety and avoidance of bib chain cross-contamination
- Improved patient comfort with soft, no chill fabric which stretches to fit all neck sizes
- No increased cost since you will no longer need to use a disinfectant wipe or autoclave bag

We hope this information on bib chain contamination educates you on the risks and convinces you to make a switch to Bib-Eze disposable bib holders. If there are questions we can answer for you, please don't hesitate to contact DUX Dental at 1.800.833.8267 or e-mail [bzettler@duxdental.com](mailto:bzettler@duxdental.com).

Sincerely,

A handwritten signature in black ink that reads "Robert Zettler".

Robert Zettler

Director Sales

DUX Dental

E: [bzettler@duxdental.com](mailto:bzettler@duxdental.com)

P: 513.604.2518

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## BIB CHAIN CONTAMINATION SCIENTIFIC STUDIES

2



## MICROBIAL CONTAMINATION OF PATIENT NAPKIN HOLDERS

RR#29, June 2010

John A. Molinari, Ph.D.  
THE DENTAL ADVISOR Biomaterials Research Center  
Dental Consultants, Inc., Ann Arbor, Michigan

**Purpose** – The primary purpose of this study was to evaluate the presence and composition of bacterial contaminants on patient napkin holders (*i.e.* *bib chains*) before and after patient care appointments. Experiments were also performed to investigate the effectiveness of cleaning procedures on reusable bib chains.

**Materials and Methods** – Two types of bib chains were utilized: metal napkin holders with clips and coiled plastic holders with metal clips. Routine bacteriological culturing of experimental and control chains was performed by initially placing each specimen in 10 mL of sterile tryptic soy broth (TSB) for 30 seconds, followed by 15 second agitation using a vortex mixer (*Fisher Scientific*). This procedure was intended to remove and collect contaminant bacteria from the chains and suspend them in the TSB for subsequent culture. In this manner, a more accurate determination of the actual number of viable bacteria adherent onto the chains could be made. Following this, 1.0 mL of each exposed broth preparation was cultured in duplicate on tryptic soy agar plates containing 5% sheep blood, and incubated aerobically for 24-48 hours at 37C. Microbial growth was assessed visually and colony counts determined. All culture procedures were performed within 2 hours of sample collection.

**Controls and Study Groups** – New metal and plastic napkin holders taken from the manufacturer’s packaging served as controls in order to provide baseline bacterial data (*Group A*). Metal and plastic bib chains assayed after use during patient care were divided into 2 other experimental groups. Chains in one group were wiped with an intermediate-level, environmental surface disinfectant towelette after each patient appointment (*Group B*). The number of patients treated using each chain was recorded and used to assess the effectiveness of periodically cleaning them during the practice day. The third group utilized bib chains that were re-used without being wiped after each treatment appointment (*Group C*). The number of uses for each of these napkin holders also was noted.

**Results** – As expected, control, unused metal and plastic napkin holders in Group A were found to harbor very few contaminant bacteria (*Table 1*). When representative colonies were Gram-stained and viewed under the microscope, the predominant forms were gram-positive cocci in

irregular clusters (*Fig. 1&2*). Both the white, smooth, circular appearance of the colonies and the microscopic observations suggested that these predominant demonstrable bacteria were staphylococci. *Staphylococcus spp.* are among the most common, adaptable environmental bacterial forms and are routinely found on virtually all inanimate surfaces.

Metal and coiled plastic napkin holders in Group B that were quickly wiped between use on patients with an EPA-approved, intermediate level disinfectant showed more bacterial contamination compared to unused controls (*Fig. 3&4*). While the mean bacterial levels for the “cleaned” bib chains were not high, a range of colony counts was noted for bib chains assayed after use on two - four patients. Some samples even failed to yield any growth. Of additional interest, culture of re-used and wiped plastic napkin holders yielded a mean colony count that was almost two times greater than that found for the metal chains (*41.3 vs. 21.9 CFU/mL*). This increased microbial load may have occurred because of the more complex, coiled structure of the former type of napkin holder. Thorough cleaning of this type of chain could require a greater effort on the part of dental personnel in order to reach less accessible areas. For the present study, personnel were asked to only perform a quick wiping motion over the chain with the moist towelette.

The highest levels of bacterial contamination were found on metal and plastic napkin holders in Group C, sampled after use on multiple patients without cleaning between treatment appointments (*Fig. 5&6*). Observation of bacterial colony morphologies, color, hemolytic reactions on trypticase agar with 5% sheep blood, and microscopic viewing of representative gram stained colonies indicated that the overwhelming majority of organisms appeared to be gram-positive cocci in clusters or chains, and gram-positive rods. When these factors were considered together, it suggested that most of the isolated bacteria were environmental bacteria, and/or components of the skin or oral cavity. Contamination of chains could have occurred by a few different mechanisms: 1) prolonged contact of the bib chain with the patient’s neck, thereby contacting normal epithelial bacterial flora; 2) exposure of the chain to microbe-containing aerosols and spatter generated during treatment, and 3) handling of the napkin holders with gloves contaminated during patient care.

	Number Tested	Mean CFU/mL (range)
<b>Group A</b>		
Metal Bib Chains	5	0.6 (0 - 2)
Plastic Bib Chains	5	2.5 (0 - 5)
<b>Group B</b>		
Metal Chains	10	21.9 (3 - 38)
Plastic Chains	10	41.3 (0 - 95)
<b>Group C</b>		
Metal Chains	10	283.2 (7 - >1500))
Plastic Chains	10	523.1 (37 - >1500)

**Conclusions** – Microbial contamination was found on both metal and coiled plastic napkin holders after use during patient care. The highest concentrations of isolated bacteria were observed on bib chains where a cleaning procedure was not performed between patient uses. Although cleaning chains with a disinfectant wipe between patient appointments lessened the microbial load, resultant bacterial levels were still higher than those noted for new unused patient napkin holders.



Figure 1:  
Bacterial growth from  
unused metal patient  
napkin holder



Figure 2:  
Bacterial growth from  
unused plastic patient  
napkin holder



Figure 3:  
Bacterial contamination  
found on a metal napkin  
holder that was used on  
3 patients and wiped with  
a disinfectant towelette  
between each use

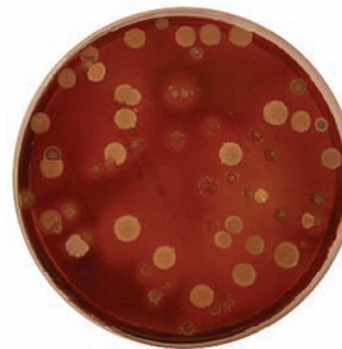


Figure 4:  
Bacterial contamination  
found on a plastic napkin  
holder that was used on  
4 patients and wiped with  
a disinfectant towelette  
between each use



Figure 5:  
Bacterial contamination isolated  
from a metal napkin holder,  
which was reused on 8 patients  
without any cleaning procedure  
performed between each use



Figure 6:  
Confluent microbial growth  
from a plastic bib chain  
used on 8 patients without  
any cleaning procedures  
performed between each use

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# RDH

## DON'T CLIP THAT CRUD ON ME

by Noel Kelsch, RDHAP  
E: n.kelsch@sbcglobal.net

She stood holding a bib chain in her hand, gently swirling it as I prepared lunch. We often brought the clip into the kitchen to save our street clothes from the ravages of baked ziti and the turbulence of tamale pie. I watched the chain go back and forth and realized that something was coming from it. On closer examination, we discovered that debris was falling from the balls that made up that chain. Bib clips and other items with hidden reservoirs can be a source of cross-contamination when they come in contact with moisture or dislodged debris and contaminate the patient or environment.

The Centers for Disease Control and Prevention defines cross-contamination as the act of spreading bacteria and viruses from one surface to another. Since blood-borne viruses can live on objects and surfaces for up to a week, germs could be spread when surfaces are not disinfected the right way or if equipment is not cleaned and sterilized between patients.

Each day that I put that clip in place, I felt guilty and decided it was time to find out exactly what risks I was taking and developed a simple solution to my observation. I decided to agar plate a variety of clips and see exactly what I was sharing with my patients. I gathered 12 clips from a variety of offices and placed them in sterile pouches, plated them out and did a count of the results after 48 hours of incubation. Each office reported they had disinfected the item using a hospital grade disinfectant but had never sterilized the item or put it in the ultrasonic bath.

**Just so you know** – CFU is a measurement of colony forming units of viable bacteria or fungal numbers. The method I used was to agitate the clips in sterile saline and plate out on agar (see related chart). It was incubated for 48 hours and a count was done. The count is given in CFU/mL (*colony forming units per milliliter*). The Environmental Protection Agency has established a limit of 500 CFU/mL for drinking water.

### What I discovered

- Bib clips and other items can be a source of cross-contamination. In their crevices, they can harbor pathogens.
- When the hollow bib clip was placed in solution, it released debris out of the tubing

and had some of the highest CFU/mL counts. In the moist dental environment we work in, cross-contamination could occur in the same manner.

- The larger the inaccessible area, or “hidden” surface area the higher the CFU/mL count. The clip that had a plastic mouth with many crevices and indentations and the chain that had flaking paint and an inaccessible plastic ring had the highest counts.
- The solid rubber bib clip with limited indentations and crevices had the lowest number of CFU/mL.
- The autoclaved and the disposable bib holders did not create enough CFU/mL to be considered a source of viable pathogens.

### Solutions

- Use disposable bib holders. They are simple to use, cost effective, and limit cross-contamination.
- Use bib holders with no chains, limited embossing, and no crevices. Do not buy clips that cannot be sterilized (*most can*). Put one in each setup, run through the ultrasonic bath to remove debris, and then sterilize.
- Do not bring any dental equipment into the area set aside for food in the dental setting. The chance of cross-contamination is not worth the risk.

Bib clips and other items with hidden reservoirs can be a source of cross-contamination. Every health-care professional has the responsibility of protecting patients and themselves from the risk of cross-contamination.

**About the Author** – Noel Brandon Kelsch, RDHAP, is a syndicated columnist, writer, speaker, and cartoonist. She has received many national awards and owns her dental hygiene practice that focuses on access to care for all. She has devoted much of her 35 years in dentistry to educating people about the devastating effects of methamphetamine and drug use. She is immediate past president of the California Dental Hygienists’ Association, on the board of directors for the Simi Valley Free Clinic, and is a five-time winner of the Castroville Artichoke Cook-off.

**Table**  
Examination of bib clips for colony forming units per milliliter

Type	CFU/mlt	Comments on inspection with magnification	Age of clip
Rubber hollow tubing, metal clip	2,860	In solution, debris came out of tubing	2 years
Chain, plastic on clip	2,900	Cement on plastic, debris on inside of clip	5 years
Chain, no plastic on clip	2,120	Debris on clip	3 years
Chain, plastic on clip	2,720	Debris under plastic	1 year
Chain with plastic on clip	3,520	Paint chipped, debris under paint	6 years
Rubber solid no tube, metal clip	1,410	No visible debris	6-9 months
Rubber hollow tubing, metal clip	2,980	In solution, debris came out of tubing, tubing cracked	unknown
Chain, no plastic on clip	2,330	No visible debris	1 year
Rubber hollow tubing with comical mouth for clip	3,940	In solution, debris came out of tubing	6 months
Rubber hollow tubing, metal clip	3,220	Outside of tubing had dirt and debris	1 year
Chain with plastic at clip	2,850	Debris present on chain and under plastic	4 years
Chain with plastic	2,760	Debris present in chain and under plastic	1 year or more
Bib clip with plastic	<1.0	Autoclaved	2 days
Solid rubber, metal clip	<1.0	Autoclaved	2 days
Disposable	<1.0	Disposed of in general trash	One time use



## STUDY FINDS DENTAL BIB CHAIN CONTAMINATION

### Highlights:

- UNC at Chapel Hill School of Dentistry analyzed samples from 50 hygiene and dental bib chains
- 1 out of 5 bib clips were found to have contamination
- Growth could be attributed to bacteria from saliva and/or dental plaque, skin, and water lines
- Of concern was the presence of bacterial species normally present only in the oral cavity on 14 of the 50 bib chains sampled
- Of significant concern were overt pathogens *Staphylococcus aureus*, and the enteric bacteria, *Escherichia coli*

A study out of the University of North Carolina at Chapel Hill's School of Dentistry Oral Microbiology Laboratory found that dental bib clips may be potential sources of cross-contamination in a dental office.

Researchers sampled 50 bib clips from both hygiene and dental operatories. The results will make the most ardent disinfectant re-think their use of a bib chain. One out of five bib clips were found to have a presence of significant microorganisms. Of most concern were the pathogenic species found: pseudomonas, *S. aureus* and the enteric bacteria, *E. coli*. Patients with compromised immune systems or breathing disorders may be at more risk considering some of the disease-causing bacteria found have been implicated in severe respiratory infections.

Bacteria from the previous patient can stay on the clip and be passed on to the next unsuspecting patient or dental professional. UNC found that the species comprising the contamination on the clips were consistent with coming from saliva and/or dental plaque, skin or water lines.

“Finding one bib clip in this study that harbored potentially disease-causing bacteria would be a concern so the fact that close to 20% of bib clips studied showed a significant presence of microorganisms is important for dental offices to consider”

remarked Dr. Roland Arnold, UNC's Professor of Diagnostic Sciences and Director of Oral Microbiology Laboratory.

The good news is that there are ways to avoid the risk of bib chain contamination. An office can effectively sterilize chains between patients or choose a disposable bib holder that is discarded with the bib. When choosing a solution an office should consider which option reduces the risk the most and which option is easiest to implement.

### SOURCE:

UNC at Chapel Hill School of Dentistry, Oral Microbiology Lab

Please e-mail any request for information to: [mdurda@duxdental.com](mailto:mdurda@duxdental.com)  
Study on file at DUX Dental



## GROSS OUT...AT THE DENTIST

by Colleen Cappon  
FoxNews.com  
Published July 15, 2011



It doesn't take a doctor to know that the medical field has more than it's fair share of germ situations — but some recent findings about germs at the dentist, in places you may not expect, could really gross you out, and may even be dangerous.

While sitting in the dentist chair, gloves, masks, eye wear and plastic-wrapped sterile packets are all common sights. But as careful as the staff at the office can be to make sure everything is clean, there are other places that are not so obvious when it comes to potentially dangerous germs, especially the chain clips that hold a patient's paper bib.

A study from the University of North Carolina School of Dentistry featured in Dental Health Magazine found that 1 out of 5 bibs tested were contaminated with bacteria, including traces of *Staphylococcus aureus* and *E. coli*. The majority of bacteria growth was attributed to saliva, dental plaque, skin and flesh.

The culprit? The design of the chain.

Noel Kelsch, former president of the California Dental Hygienists' Association, conducted her own study that was published in a recent issue of *Infection Control Today*.

"The more crevices and indentations on a clip or a chain, the higher the contaminant count," she said.

The Centers for Disease Control and Prevention defines cross-contamination as the act of spreading bacteria and viruses from one surface to another. Blood-borne viruses have the ability to live on objects and surfaces for as long as a week, meaning germs could be spread easily if surfaces are not disinfected or if equipment is not cleaned between patients.

The potential danger arises with the combination of the bib chain not being cleaned between patients and the same gloves that handled the chain also going into the patients mouth.

Dr. John Molinari, director of infection control for The Dental Advisor in Ann Arbor, Mich., told FoxNews.com that although there is potential for serious infection from cross-contamination at the dentist, it is unlikely in most situations.

Molinari was part of a study conducted at the Biomaterials Research Center on samples of chains that had not been cleaned after use, those that had been cleaned with a disinfecting wipe, and others that had been put in a heat sterilizer. He submerged each chain in liquid in a vortex machine, where the germs from the chains were transferred to the liquid. The results showed that heat sterilized chains had no bacteria, and wiped chains had a minimal amount of bacteria. But those chains that had been tested immediately after use with no cleaning showed up to 1,000 bacteria per millimeter of liquid.

"Bacteria from patients mouths transfers on to surfaces through the air from aerosols from air and water syringe sprays or gloved hands in people's mouths and then touching other items," he said. Thankfully, Molinari said for the majority of people, contamination at the dentist office is nothing to lose sleep over.

"Typically these are normal organisms that live in everyone's mouth. We are exposed to them routinely, it is part of life," he said. "But those who are immune system compromised, elderly, ill, cancer survivors...but on the extreme end, if someone has MRSA and that gets on there that could cause skin infections."

So what can patients do to protect themselves? Molinari said communication with your doctor is key.

"Patients can ask. Talk with your doctor about what they do for infection control. If patients don't ask, they can jump to all kinds of conclusions," he said. "I think the majority of patients would be pleasantly surprised."

**SOURCE:**  
<http://www.foxnews.com/health/2011/07/15/gross-outat-dentist/>





## CAN WE BREAK THE CHAIN OF GERMS AT THE DENTIST?

Posted Friday, March 25, 2011 by Brenna Fisher



Whether we mean to or not, we all observe the dentist or dental hygienist bring out a new package of freshly sterilized dental tools. This act reassures us that we are being treated with clean instruments. What we may not pay attention to, or what might be harder to notice, is whether the chain around our necks that fastens bibs in place has been sterilized between every use. Multiple studies last year identified bacteria on bib chains that were not properly cleaned. A University of North Carolina at Chapel Hill's School of Dentistry study found that one in five bib clips were contaminated with a significant presence of microorganisms such as pseudomonas, E. coli or staphylococcus aureus (*a common cause of staph infections*). It sounds scary, but by simply rinsing the chain and then completely immersing it to soak in an EPA-registered disinfectant for the proper amount of time, dental professionals can rid the chains of germs and minimize the risk of cross contamination. Furthermore, there is growing interest in using disposable one-time-use bib holders that do not require such sanitation. If given the choice, which would you prefer, a sanitized bib chain or a disposable one?

**TAGS:** bacteria, bib chain, dental bib, dentist, disinfectant, germs, sterile

**SOURCE:**

<http://www.newbeauty.com/dailybeauty/entry.aspx?id=4207#eb22>

### WHAT THE EXPERTS SAY

**Dr. Jenifer C. Back** – Cosmetic Dentist



Most dentists no longer use the little metal chain, many use disposable or smooth plastic sleeves that are easily disinfected. This is only one of many check points at the dentist's office. Use your senses to tell you if your dentist is practicing safe hygienic processes. Look, is the office generally well cared for and clean? Is it organized these details give you a sense of how the office is run. You decide for yourself – Is this the right office for me?

Posted March 28, 2011 9:41 PM

**Dr. Niloufer G. Hamsayeh** – Cosmetic Dentist



Sanitation is a huge focus of our entire staff, while being an eco-friendly dental office as well. We use the smooth plastic sleeve and thoroughly disinfect after each use. A dental office must be a clean, caring and safe place for everyone.

Posted March 29, 2011 4:08 PM

**Dr. Ronald E. Goldstein** – Cosmetic Dentist



No doubt this has and still is a problem. Our office has long since autoclaved our bib chains and we make patients aware of it. But I must tell you that what we do here in our Galleria Atlanta office is so much more that you will see in most any physician's office...Scares me when I go into some!

Posted March 29, 2011 7:01 PM

**Dr. Laurence R. Rifkin** – Cosmetic Dentist



Breaking the chain of infection is a most important topic that impacts not only the patient but the entire dental staff. The focus, effort and expense of infection control or prevention has never been more stringent or regulated than today by dental offices and state and local agencies. The use of sterilization, autoclaving, surface disinfectants and disposables is an everyday, every minute operational protocol in hopefully every office. There are also disposable bib chains that we use to reduce the need for sterilization of the historic bib clip. An additional suggestion to reduce bacterial cross-contamination is to have every patient floss, brush and finally pre rinse with an effective antimicrobial mouth rinse such as Chlorhexidine at the beginning of every appointment. This will reduce the bacteria in each patient's mouth before treatment begins. Always observe to see if dental equipment has fresh covers on handles and that all surfaces have been disinfected as well as the dentist and staff using approved clothing and cover ups during clinical procedures that may create aerosols and contamination.

Posted March 30, 2011 3:32 AM

## DENTAL BIB CHAINS ARE POTENTIAL SOURCE FOR INFECTION AND DISEASE

Copyright 2011 by Virgo Publishing.  
<http://www.infectioncontroltoday.com/>  
 Posted on: 03/22/2011

Wet, used towels left in the gym. Dirty tissues discarded by someone suffering from a nasty cold. A toothbrush discovered in a hotel room. Most of us would never use or even touch these items. But without knowing it, we may be sharing something that could be just as disgusting and potentially dangerous. When we visit a dental office and a bib chain that is not sterilized between patients is placed around our neck, we may be unwittingly exposed to pseudomonas, E. coli and S. aureus – the most common cause of staph infections and a potential “superbug.”

Noel Kelsch, a national infection control columnist, Registered Dental Hygienist and former President of the California Dental Hygienists’ Association, conducted a study on various types of dental chains and clips after seeing debris falling from a chain she had planned to use to protect her uniform at lunch. What she found led her to pen a column titled “Don’t Clip that Crud on Me” for RDH Magazine, a trade publication for dental hygienists.

“The more crevices and indentations on a clip or a chain, the higher the contaminant count,” she says. As expected, disposable clips and holders opened fresh for each patient, were free from contaminants and posed no cross-contamination threats. “As an

advocate for patient safety within our profession, I think it’s very important to take whatever steps we can to eliminate sources of potential harm for our patients.”

Her findings echoed a study conducted by the University of North Carolina at Chapel Hill’s School of Dentistry Oral Microbiology Lab that found bib chains and clips are potential sources of contamination. In sampling 50 bib clips from various hygiene and dental operations, researchers discovered one in five bib clips were contaminated with “significant microorganisms,” according to Dental Health Magazine.

In a supplement to the March 2011 issue of Dimensions of Dental Hygiene titled “Infection Control Update,” Dr. John Molinari, an international expert in the areas of infection control and infectious disease in dentistry, referenced a study he conducted that looked at the presence and composition of bacterial contaminants on patient bib chains before and after patient care appointments. His results showed that microbial contamination was present on both metal and coiled plastic bib chains after use during patient care, with the highest bacteria levels found on bib chains that were not cleaned between patient uses.

“Society is putting an emphasis on healthier living,” Kelsch says. “We’re seeing an increased awareness of infection control and disease prevention everywhere we look. Grocery stores provide hand sanitizer or disinfectant wipes for cart handles; health clubs provide disinfectant sprays so you can clean up equipment after you’ve used it. If you take the trouble to do those things – then one simple solution to protect yourself from dirty bib chains is to insist on disposable bib holders.”

In addition to providing patients with a safer dental visit, Kelsch notes that disposable dental bib holders are critical tools in the fight against the creation of more “superbugs.”

“If the infection route – dirty dental chains – is destroyed, the infection is not spread,” she says. “No infection means no antibiotics, and the improper use of antibiotics is what contributes to the creation of superbugs.”

### SOURCE:

<http://www.infectioncontroltoday.com/news/2011/03/dental-bib-chains-are-potential-source-for-infection-and-disease.aspx>

## SOME MEDICAL, SCIENTIFIC STUDIES NOT FOR THE FAINT OF HEART

by Lee Bowman

Last Modified: May 14, 2011 08:32PM



This Jan. 15, 2009 picture made available by the Texas Parks and Wildlife Department shows a nine-banded armadillo in Texas. With some genetic sleuthing, scientists have fingered a likely culprit in the spread of leprosy in the southern United States: the nine-banded armadillo. (AP Photo/Texas Parks and Wildlife, Chase A. Fountain)

There are medical and scientific studies aplenty that point the way to new cures and better practices. And then there are those that make us cringe and think, “eww, gross.”

Several recent studies described here fall in the latter category.

**Natty Nits** – Modern humans started wearing clothes about 170,000 years ago, scientists at the University of Florida report. They know this because humans almost immediately became infested with body lice, which only evolved when our ancestors (*mostly hairless for 800,000 years*) started giving them more places to hide.

Mammal specialist David Reed plotted the timing of the cover-up by using genetic sequencing to show when body/clothing lice diverged from human head lice into a separate species.

Lice and other parasite studies are all the rage lately. Another report took the lineage of strains that infest birds all the way back to the era of dinosaurs.

**Killer Bedbugs?** Researchers at St. Paul’s Hospital in Vancouver, British Columbia, rounded up bedbugs from three infested patients. They found that the nasty little critters were carrying at least two types of highly drug-resistant bacteria strains (*one a type of enterococcus that was resistant to vancomycin*) and several other antibiotics; another a staphylococcus strain resistant to methicillin and some other antibiotics.

The scientists, who report their findings in the June issue of the journal *Emerging Infectious Diseases*, note that there’s no evidence that bedbugs are actually spreading the infections. But because bedbugs do bite and suck blood from their victims, it’s still important to know many carry dangerous germs.

**Armadillos Alert** – Scientists studying leprosy have known for 40 years that armadillos, those odd chain-mail mammals that range over much of the South, are the only animals besides humans known to carry the bacteria that cause the disease. Apparently, it’s because of a low body temperature.

But a new study done by researchers in Switzerland and Louisiana State University found that armadillos of the American South carry a unique strain of leprosy bacteria. They found it in the animals and 22 humans who contracted leprosy without traveling outside the U.S.

The researcher suggested that people avoid handling armadillos (*or eating them*).

**Dental Germs** – Going to the dentist, you may notice how fresh and sterile everything is in and around the chair (*sealed packs of instruments, new disposable bibs and gowns and masks*) except, perhaps, for the metal or plastic clamps and chains that attach the bib around your neck.

Researchers at the University of North Carolina’s dental school collected 50 clips from various offices and clinics and found 14 carried significant contamination from bacterial strains normally found only inside the mouth, including nasty strains of staph and *E. coli*.

The good news is that after other researchers confirmed this problem, equipment suppliers have rapidly begun changing practices in most offices to either sterilize bib clamps or go with disposables.

**Green Skin?** The tiny flakes of skin we constantly shed aid in a chemical process that reduces irritating ozone levels in indoor air, concludes a new study published in the journal *Environmental Science & Technology*.

### SOURCE:

Scripps Howard News Service

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## The Dentist's Network

Solid Solutions for Today's Dental Practice

### DON'T CROSS-CONTAMINATE ME



by Louis Malcmacher  
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snetwork.net

Since I began practicing dentistry, now almost 30 years ago, probably the area that has changed the most is the area of infection control in dentistry. Yes we have had many technological advances such as CAD/CAM and lasers but on a day-to-day, in the office nuts and bolts part of the practice, *infection control has changed the way that we practice dentistry* and may continue to do so.

I remember in dental school we never wore gloves, except for particularly bloody extractions and even that was unusual. I remember some instructors calling people who wanted to wear gloves during those kinds of extractions “sissies.” We would certainly wash our hands very well before each patient and in between patients and that was considered adequate infection control. Before I sound like I am from the dark ages, we did have autoclaves even back then but most everything in the operatory was wiped down with somewhat damp alcohol gauze. That was considered good enough.

Certainly, in this day and age, infection control has *become much more serious and much more effective*. Everything that goes into the patients' mouth is autoclaved. Counter tops and other areas that cannot be sterilized are disinfected with excellent products. We know that we cannot make the dental operatory a complete sterile environment, but we have certainly done a much better job controlling this as ever before.

With all of our infection control procedures, what is incredible is that sometimes we miss the very obvious. I would like to direct you to a study done at the University of North Carolina

Chapel Hill School of Dentistry about bib clip chains. Yes, that is right, the little chains that you clip on the patients bibs can be a real source of cross-contamination and most dental offices have not even thought about or addressed this issue. Think about this scenario – a patient walks in, sits down in the dental chair, the assistant is bare-handed then takes the bib that is put on the end of the dental chair which has been used on the last six patients, she picks up this bib chain, fiddles with it to straighten it out because sometimes it gets knotted up, and then puts this around the patient's neck. The dental assistant's hand has now been cross-contaminated with saliva, pathogens, hair, blood, and lots of aerosol sprays that have been clinging to this bib chain. The patient is then laid back into the chair and as is very normal, the bib starts to slide off of one side so we fix it for the patient and many times the bib chain brushes against the patient's face or even their lips or sometimes even into their mouths. You and I both know that bib chains are rarely disinfected and certainly never sterilized.

The bib chain culture studies carried out at the UNC School of Dentistry demonstrated that 1-in-5 bib chains harbored pseudomonas, E. coli, and staphylococcus aureus. These colony-forming units were of sufficient quantity to be considered *an actual source of cross-contamination*. Further, considering that the disease-causing bacteria found on bib chains have also been implicated in respiratory infections within the general public, patients with compromised immune systems and breathing disorders may be even at greater risk.

Certainly, we all know that blood borne viruses can live in operatory surfaces for up to one week, especially when these surfaces are not disinfected either the right way or certainly when they are not cleaned or sterilized at all. The Center for Disease Control and Prevention defines cross-contamination as the act of spreading bacteria and viruses from one surface to another. In short, the bib chain fits every definition of cross-

contamination, *so it must be addressed in the dental office.*

The reason it sounds like I am making a big deal of this is because it is. I have been around too long in dentistry to know that *if we don't start taking care of some of these major or minor concerns ourselves*, then they become big expose articles in Reader's Digest or on CNN Health Watch and the media can make it sound as if dentists are infecting millions of patients every single day with something that is actually very simple to take care of.

Here are your choices to avoid the risk of bib chain contamination. With each patient bib change you can:

- Ultrasonically clean them, place in a pouch, and autoclave to completely sterilize the bib chain.
- Rinse off any gross debris, immerse the bib chain in an EPA Registered disinfectant (*for the time needed to properly disinfect*), then remove, dry and store in a clean area.
- Use a disposable bib holder such as Bib-Eze by DUX Dental. These are single use disposable bib holders made of soft elasticized fiber which will eliminate the cross-contamination and you will never have to clean a bib holder again. They are also priced very economically and come out to less than a disinfectant wipe.

These are simple solutions to ensure that we never have to worry about such a small item that could turn into the next “scandal” in dentistry.

**About the Author** – Louis Malcmacher DDS MAGD is a practicing general dentist and an internationally known lecturer, author, and dental consultant known for his comprehensive and entertaining style. An evaluator for Clinicians Reports, Dr. Malcmacher is a consultant to the Council on Dental Practice of the ADA.

#### SOURCE:

<http://www.thedentistsnetwork.net/newsletters/print/louis/printLouis91.html>

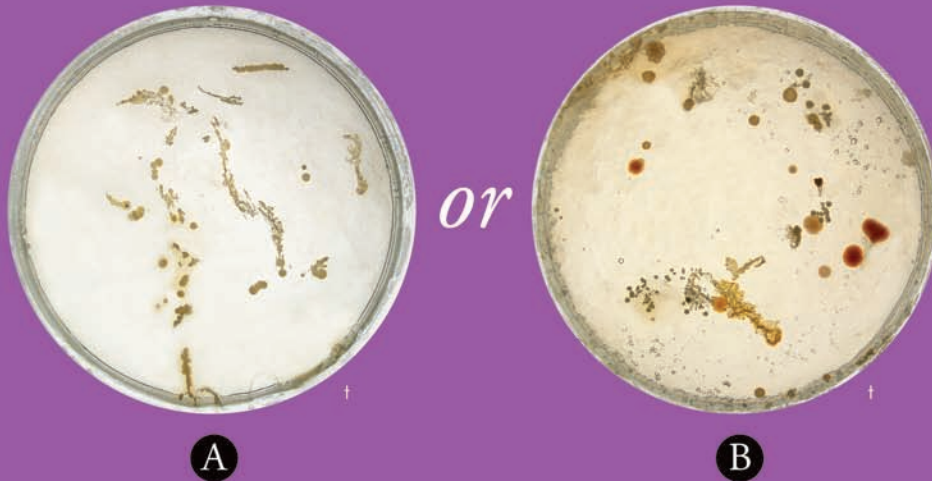


## BIB-EZE PRODUCT INFORMATION

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**Guess which petri dish is from a men's restroom and which is from a "cleaned" bib chain\*?**



**B is the bib chain petri dish.**

Don't be surprised. Recent studies, including Dr. John Molinari's research with THE DENTAL ADVISOR, found\*\*:

- Microbial contamination on both metal and coiled plastic napkin holders after use during patient care
- The highest concentrations of bacteria were observed on bib chains where a cleaning procedure was not performed between patient uses
- Most of the isolated bacteria were environmental bacteria and/or components of the skin or oral cavity

**Science speaks for itself. Avoid the risk today.  
Use disposable bib holders.**

An educational message brought to you by DUX Dental.



\*Petri dish growth after 72 hours from cultures taken from a public men's restroom door handle and a bib chain from a dental office that was reportedly "cleaned" ready for use with the next patient.  
\*\*THE DENTAL ADVISOR RR#29, June 2010. <http://www.dentaladvisor.com/infection-control-corner>. † These photos are NOT from THE DENTAL ADVISOR study.

Contact your dealer to order.  
For more information contact DUX Dental  
1.800.833.8267 | [www.duxdental.com](http://www.duxdental.com)

Trust.Worthy.Innovation.





# Avoid bib chain contamination risk.

Use **Bib-Eze**  
Disposable Bib Holders

## The science speaks for itself\*:

- 1 out of 5 bib clips showed significant presence of microorganism growth and some were found to harbor the opportunistic pathogen *Pseudomonas* and overt pathogens *Staphylococcus aureus* and the enteric bacteria, *E. coli*.

*Dental Bib Clip Contamination Study. University of North Carolina School of Dentistry Oral Health Institute, December 2009*

- Microbial contamination was found on both metal and coiled plastic napkin holders after use during patient care. Most of the isolated bacteria were environmental bacteria and/or components of the skin or oral cavity.

*THE DENTAL ADVISOR, J. Molinari Ph.D., RR#29  
http://www.dentaladvisor.com/infection-control-corner*

- Bib clips and other items can be a source of cross-contamination. Bib chains and other napkin holders can harbor pathogens in their crevices.

*Noel Kelsch RDHAP Study. RDH Magazine, January 2010*



REF 35053 MSRP \$12.25

\*All data on file: marketing@duxdental.com

## What Bib-Eze users are saying:



"I want my patients to know I'm doing everything I can in my office to address infection control. When such a simple and inexpensive solution like Bib-Eze exists to avoid cross-contamination, of course I'm going to use it and so should your dental office"

*Louis Malcmacher DDS - Bay Village, OH*



"Contaminated Bib Clips!!? Now who would've thought that? Fortunately we don't have to wait for a fix. DUX already has it. Check out Bib-Eze. It'll be one less thing for the staff to worry about with regard to sterilization. Relax...this one's easy..."

*Martin B. Goldstein DMD - Wolcott, CT*



"In dental school they stressed the importance of infection control via single use or disposable products. I love Bib-Eze as a disposable alternative to those potentially contaminated metal bib clips"

*James Salling DMD - Wilmington, NC*

Contact your dealer to order.  
For more information contact DUX Dental  
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## PRODUCT PHOTOS AVAILABLE FOR DOWNLOAD ONLINE

These images below take a few minutes to download as they are high resolution.

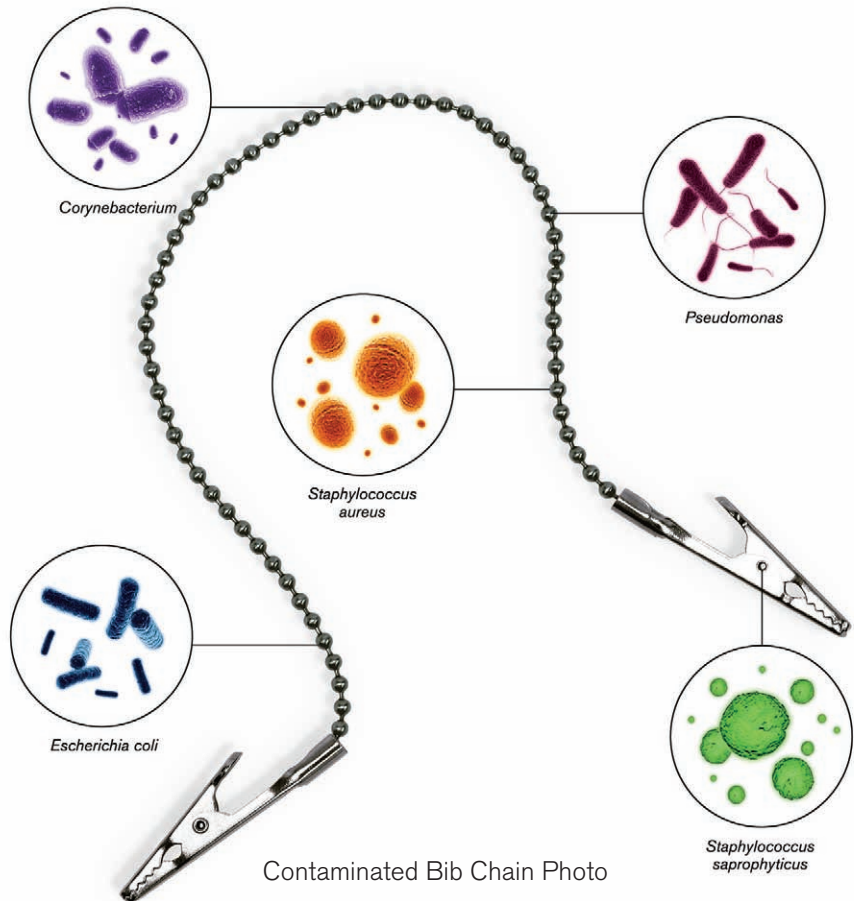
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No Bib Chain Photo



Bib-Eze In Use Photo



Contaminated Bib Chain Photo



Bib-Eze Box



DUX Dental Logo

### OTHER RESOURCES - HELPFUL LINKS

#### INFECTION CONTROL CONTINUING EDUCATION COURSES

[www.dentalaegis.com](http://www.dentalaegis.com)  
[www.dimensionsofdentalhygiene.com](http://www.dimensionsofdentalhygiene.com)  
[www.ineedce.com](http://www.ineedce.com)

#### INFECTION CONTROL AND PREVENTION

[www.osap.org](http://www.osap.org)  
[www.cdc.gov](http://www.cdc.gov)

