



What changes lie ahead...?



Also inside:

- Teaching to Test? • TechBac Curriculum
- Building on Success • Copper vs Germs

COPPER vs GERMS

The battle against infections in our hospitals and communities is fraught with problems, such as antibiotic resistance and the rise of so-called 'superbugs', but we have a surprising ally: copper.

Did you know copper kills germs?

You may already be familiar with copper's antimicrobial properties, meaning its ability to rapidly kill germs that can cause infections. It's not a new discovery – the Ancient Egyptians, Romans and Greeks are among those who exploited the metal's hygienic properties – but the scientific research backing its modern use in hospitals only began around 15 years ago.

Professor Bill Keevil at the University of Southampton published the first major research in 2000, showing that MRSA bacteria died rapidly on copper surfaces, whereas it survived and multiplied on stainless steel. He went on to show that many copper alloys – such as brass and bronze – were also capable of eliminating bacteria and viruses, including *E. coli* and Influenza A.

Copper plumbing

Plumbers spend their days installing copper pipework, so it's nice to know the plumbing materials are keeping them safe, as well as providing clean fresh drinking water for home owners.

One of copper's most outstanding characteristics is its hygienic credentials: copper pipes do not release any unknown substances, nor any nutrients that under certain circumstances might promote the growth of microorganisms.

Moreover, copper does not allow gases to diffuse through the tube wall, meaning bad

smells or other disturbing influences cannot enter the system and impair the quality of the water. The result: first rate drinking water at any time, all through the house!

More hygienic touch surfaces

An estimated 80% of infections are spread by touch – a fact the 'Catch it. Bin it. Kill it.' campaign was designed to highlight – so making touch surfaces from a naturally antimicrobial material has clear benefits.

Professor Keevil's research has been built on by researchers around the world, confirming copper's efficacy against a wide range of germs that threaten human health. It has also been tested in real-life situations, outside the lab, in hospitals and schools looking for ways to reduce the spread of infections.

The first in-hospital trial was carried out in the UK, at Selly Oak Hospital in Birmingham. It found that copper and copper alloy surfaces were 90–100% less contaminated than non-copper equivalents (made of standard materials such as stainless steel and plastic).

In a multi-hospital US clinical trial, the researchers also looked at the effect this reduction in contamination has on patients. They found that patients in rooms containing copper surfaces were 58% less likely to get a healthcare-associated infection than patients in regular rooms.

Looks clean, but is it?

This reduction in contamination is on a microscopic level: copper continuously kills germs that we can't see with our naked eyes, but which are lurking on surfaces that may appear clean to us.

Copper surfaces can and should be cleaned just the same as any surface. The difference is that in between regular cleaning, it is also killing germs that might otherwise be picked up on someone's hands and cause an infection.

This research has led hospitals around the world to install surfaces such as taps, grab rails, cubicle locks and flush handles, door handles, bed rails, IV poles and light switches made from copper and copper alloys. This family of solid, copper-based materials is known as 'antimicrobial copper'.

Won't it go green?

Antimicrobial copper surfaces are available in a broad range of colours – from the red of copper and gold of brass, through the brown of bronze right up to silver-coloured alloys such as copper-nickels – but green isn't one of them!

Whilst the surfaces will naturally darken with time, as copper does, routine cleaning will prevent the formation of green patina. You wouldn't want to be in a hospital where the surfaces are never cleaned!

Where can I get it?

Companies around the world are offering a broad range of touch surface items in antimicrobial copper, available in many colours and designs. Whilst many ranges are designed for commercial use (in hospitals, mass transit, schools and restaurants), there are also residential products available.

www.antimicrobialcopper.org is host to a searchable product directory of all approved products currently on the market. It's also the place to go for more information on antimicrobial copper and where it's being used.



Washroom facilities at the Bostonian sleep clinic – courtesy of Brass Age