OMEGA
SURGICAL INSTRUMENTS

OMEGA STERILE PACKAGED SINGLE USE SURGICAL DRILL BITS

WHY SINGLE USE TWIST DRILLS?

Improve your chances of a positive outcome with Single Use Surgical Drill Bits.

- Eliminate Patient Cross Contamination
- ISO Certified Sterility
- Better Heat Management
- Shorter Plunging Depth

Learning about the risks associated with reusing surgical cutting accessories can help clinicians understand the benefits single use drill bits can provide to patient care and recovery.

ELIMINATE PATIENT TO PATIENT CROSS CONTAMINATION

One of the greatest risks with reusing drill bits in consecutive surgeries is cross contamination which can lead to infection. A 2002 resterilization study [1] found up to 40% of single use devices remained unsterile after resterilization, even when attempting to clean according to regulatory standards for sterility. It was concluded that, "None of the reprocessed SUDs were effectively cleaned or sterilized". [1] The risk of infection due to cross contamination is always greater when reusing a surgical drill bit. Cross contamination risk is reduced when using a new single use device because it has never contacted another patient. A single accidental oversight in cleaning can lead to a negative outcome.

Pitted drill surface after repeated use

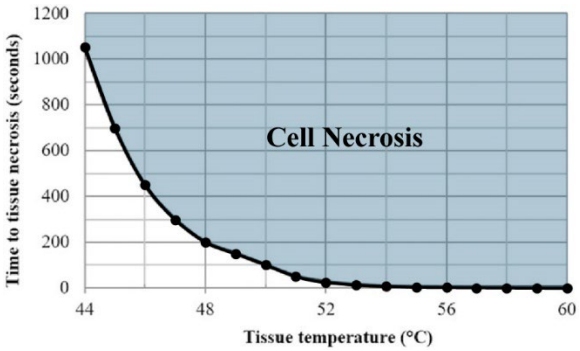
ISO CERTIFIED STERILITY

Single use devices are sterilized by the manufacturer per ISO global quality standards to ensure maximum protection for the patient and hospital staff. Single use drill bits contain no bioburden from previous surgeries, where used drill bits have no guarantee of cleanliness or sterility. [1]

HEAT MANAGEMENT COMPARISON BETWEEN SINGLE USE AND REUSED DRILL BITS

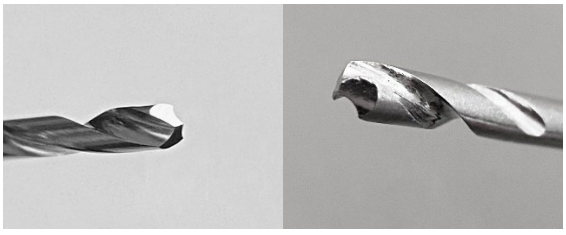
Sharp surgical drill bits cut smoothly and efficiently. A sharp edge removes more material with each revolution and limit friction. As a drill point dulls with reuse, less material is removed with each cut resulting in increased cutting time and heat buildup from friction. The recorded difference between a new and reused drill bit is substantial, and there is up to a 350% increase in heat generation when reusing drill bits. [2] The resulting heat buildup increases the risk of thermal osteonecrosis.

THERMAL NECROSIS



Time to thermal tissue necrosis [4]

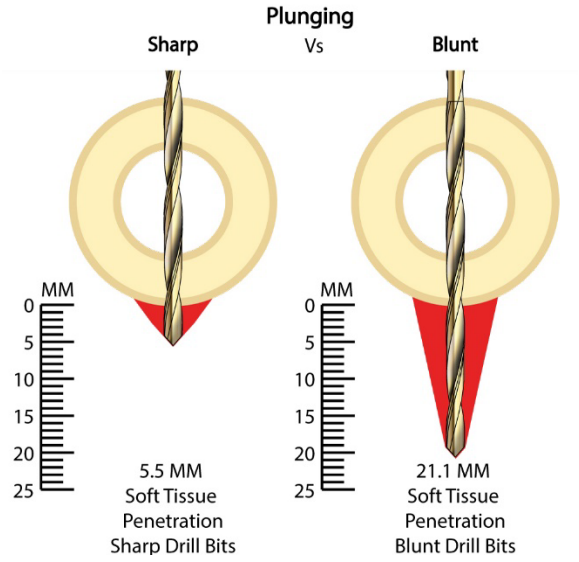
In a study published by Charles Timon and Conor Keady, it was found while cutting and drilling that, "bone heated at 47°C for one minute leads to significantly reduced bone regeneration and that bone temperatures of 50°C almost completely impairs it." [3]



New (sharp) vs Reused (blunt) Surgical Drill Bits

SHORTER PLUNGING DEPTH AIDING SOFT TISSUE PROTECTION AND ACCURACY

In a plunging study conducted in 2012 [5], researchers tested sharp vs dull drill bits. Twenty experienced Surgeons plunged 3 holes into normal and osteoporotic bone. The results measured an average of 5.1 - 5.4 MM penetration depth respectively when using a sharp drill bit. Repeating the same test with blunted twist drills, surgeons averaged 21.1 – 22 MM plunging depth. Even for experienced surgeons, the plunging depth averaged 4 times greater when using a dull surgical drill bit because of the extra pressure required to engage the drill tip. The additional penetration depth increases risk of soft tissue, vascular, and nerve trauma. [5]



Soft tissue penetration when using sharp and blunted drill bits [5]

THE BEST CHOICE

Every patient deserves the best care possible. When considering benefits of single use surgical drill bits compared to reprocessed drill bits, the only potential benefit of reprocessed drill bits is the initial cost savings; however, any cost benefit can quickly disappear with even a single negative clinical outcome. The potential complications, procedural failures, and risk far outweigh any monetary benefit. Patients can be directly affected by the hospital's decision to use reprocessed drill bits. Given the evidence, to maximize the clinical outcome single use sterile packaged drill bits are the clear choice for every surgery.

REFERENCES

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