What is Trabecular Tantalum?
- Tantalum is a metal, atomic number 73, it's biocompatibility is well established
- Trabecular Ta is a 75-80% porous structure, similar in appearance to cancellous bone

How is it Made?
- Solid tantalum is sublimed and combines with chlorine gas in a vacuum, depositing on a shaped carbon precursor(aka sponge)

What are its properties?
- Biocompatible
- Facilitates soft tissue attachment
- Allows bone and soft tissue ingrowth
- Similar mechanical properties to bone
- Strong and ductile
- Used in Hip and Knee applications since 1997

How can it be used?
- When allografts or autografts are used in structural situations, failure is not uncommon
- Shaped trabecular tantalum provides a stable construct capable of bearing loads while the surrounding graft material or host bone becomes stronger.

What are the results?
- First patient is 9 years from her TMT arthrodesis with tantalum and is a master senior golfer, winning her state championship on several occasions.

Summary
- Autograft or allograft is prone to collapse when used in load bearing situations
- Trabecular tantalum is a satisfactory alternative to biologic graft
- Similar mechanical properties to host bone
- Allows bone ingrowth and soft tissue attachment
- Further studies required.

References
3. Frigg A, Dougall H, Boyd S, Nigg B. Can porous tantalum be used to achieve ankle and subtalar arthrodesis? Clin Ortho June 2010 468:209-216