Move Implants

Titanium Foam Implant
The Innovator

2 Move Implants is a Research & Development company which focuses on creating innovating products, not only to improve a product, but also the way of doing business. To do this, we work with several partners such as universities and medical centres.

2 Move Implants developed a new technology, to use porous titanium to imitate bone in order to initiate bone ingrowth with hip implants.

With this technology, 2 Move Implants plays into current trends of an aging population and obesity plus improving current implant standards.

<table>
<thead>
<tr>
<th>Structure type</th>
<th>Dodecahedron</th>
<th>Dodecahedron</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pore Size (μm)</td>
<td>490</td>
<td>490</td>
</tr>
<tr>
<td>Titanium thickness (μm)</td>
<td>120</td>
<td>230</td>
</tr>
<tr>
<td>Porosity (%)</td>
<td>88</td>
<td>68</td>
</tr>
<tr>
<td>BS/BV (1/mm)</td>
<td>32.6</td>
<td>16.6</td>
</tr>
<tr>
<td>Conn. Density (1/mm³)</td>
<td>11.6</td>
<td>12.5</td>
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</tbody>
</table>
“If you always do what you always did, you will always get what you always got.”

(Albert Einstein)

A traditional hip implant has an average lifespan of 10 to 15 years. After this it needs to be replaced, and because of the wear, a second implant is expected to have an even shorter lifespan.

Also when using a traditional hip implant there is a chance it will not fully connect with the bone surface. Because of this osteoporosis can occur.
Innovations for the future

2 Move Implants’ porous foam promotes bone ingrowth with an open pore structure of 350 microns, comparable to natural bone, with struts of 120 microns. It is much a more even, repetitive structure than natural bone, but has all the right properties and porosity to initiate bone ingrowth.

Our porous titanium hip implant outperforms current porous implants due to the foam structure and its close resemblance to natural bone. This gives a faster rate of acceptance by the natural bone.
Validation of experiments

It is proven that the titanium foam material is capable of providing direct biomechanical support and function as an osteoconductive matrix for bone regeneration.

Trials with rat femurs have shown a significant potential for the structure of bone ingrowth. Scans are shown below.


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Breakthroughs on Nano level

The implant undergoes a surface treatment to break surface tension and promotes faster and better bone ingrowth.

Chemical surface modifications are supposed to increase the bioactivity and bone ingrowth inducing capability of porous titanium.

The surface of the treated samples is covered by Nano pore shaped features that are hypothesized to improve cell attachment and response.
Creating new knowledge

After 3 weeks there are clear signs of bone growth and after 12 weeks it is clear that the bone has accepted the porous titanium foam with a bone ingrowth of 30%. These results have been achieved without any additional bio agents.

The concept of 2 Move Implants is able to achieve 0% to 95% porosity from beginning to end, creating a seamless transfer of the porosity with no risk of detachment or delamination.
Flexibility is key

This new technology surpasses the current porous implants because of its foam structure. But it doesn’t limit itself with only hip implants.

Applications for 2 Move Implants’ Titanium Hip Implant are, but not limit themselves to, Hip, Cranium, Spine and Teeth. With these applications you are engaging the Orthopaedic market, Trauma Market and Spine Market. The combined value of these markets was 18.9 billion USD globally in 2011.

Flexible Titanium Foam Cranium Trauma applications is a unique concept which allows the implant to take the shape of the skull and allows bone to grow and seal the wound. Cranium and Spine applications are still in their infancy, but have proven to be interesting for further research.
To summarise

- Superior titanium foam structure. Unique in the market.
- Proactively engage on trends such as aging population and obesity.
- Fast bone ingrowth. 30% bone ingrowth was achieved within 12 weeks without any bio agents.
- Various applications including Orthopaedic, Trauma and Spine.
- Longer more natural fixation making it very attractive to younger patients.
- One seamless product to prevent delamination.

Latest News: 2Move-Implants will engage in clinical trials in Belgium in the near future.

Contact

2 Move Implants B.V.
www.2move-implants.com
info@2move-implants.com
Tel: +31640394429

Made Possible By: