Long-term clinical experience with the philosophy of elastic monoblock cups

References


RM Pressfit & RM Pressfit vitamys®

Innovation based on clinical evidence

**Design**
- Uncemented pressfit primary fixation
- Single Titanium particle coating – osseointegration and durable secondary stability
- Short and simple – easy to use with few surgical steps and instruments

**Reduction of stress shielding**
- Elasticity similar to human bone

<table>
<thead>
<tr>
<th>Material</th>
<th>Density [g/cm^3]</th>
<th>E modulus [N/mm²]</th>
<th>Tensile strength [N/mm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bone</td>
<td>0.2 – 2</td>
<td>500 – 6000</td>
<td>10 – 150</td>
</tr>
<tr>
<td>UHMWPE</td>
<td>0.94</td>
<td>1000</td>
<td>35</td>
</tr>
<tr>
<td>vitamys</td>
<td>0.94</td>
<td>800</td>
<td>37</td>
</tr>
<tr>
<td>Titanium</td>
<td>4.5</td>
<td>105000</td>
<td>&gt; 400</td>
</tr>
</tbody>
</table>

**Reduction of wear and osteolysis**
- Maximum possible polyethylene thickness for low wear rates

- Low wear rates reported for RM Pressfit UHMWPE cups
- vitamys® – improved wear behaviour and ageing resistance with vitamin E stabilized highly crosslinked polyethylene

**Based on the proven concept of the elastic RM Classic Cup with excellent 20y long-term clinical results**

**94.4 % survival**

Wear rates of different material combinations
(Hip simulator test: 5 mio cycles, protein content 30g/l)

80% wear reduction

UHMWPE 28 mm CoCr head
vitamys® 28 mm CoCr head