

## IMPLANTS, DEVICES AND DENTAL RESTORATIONS

NB Exact metal composition may vary

### DENTAL

| <b>Amalgams</b><br>Zinc is also present but is not tested in MELISA | <b>Crowns non noble Stainless steel, nickel/chromium or cobalt/chromium</b> | <b>Crowns noble</b><br>Precise alloys used vary between dental laboratories |
|---|---|---|
| Silver  | Chromium  | Gold  |
| Tin   | Molybdenum  | Platinum  |
| Copper  | Manganese   | Silver  |
| Inorganic mercury   | Cobalt  | Palladium   |
| Nickel  | Nickel  | Indium  |
|   |   | Ruthenium   |
|   |   | Iridium   |
|   |   | Gallium   |
| <b>Cobalt-Chromium implants</b>                                     | <b>Titanium Implant (dental)</b>  | <b>Maryland bridge</b>  |
| Cobalt  | Titanium dioxide  | Cobalt  |
| Chromium  | Titanium sulphate   | Chromium  |
| Molybdenum  | Aluminium   | Molybdenum  |
| Tungsten  | Vanadium  | Nickel  |
| Manganese   | Nickel  | Tungsten  |
| Nickel  |   |   |
| <b>Root fillings</b>  | <b>Braces/Retainers</b>   |   |
| Bismuth   | Chromium  |   |
| Tantalum  | Manganese   |   |
| Cadmium – older restorations  | Molybdenum  |   |
| Formaldehyde – older restorations                                   | Nickel  |   |

## ORTHOPAEDIC AND CV

| Titanium Implant (spinal)           | Surgical steel/ stainless steel | Cobalt Chrome TKR /THR |
|-------------------------------------|---------------------------------|------------------------|
| Titanium dioxide                    | Chromium                        | Cobalt                 |
| Titanium sulphate                   | Molybdenum                      | Chromium               |
| Aluminium                           | Manganese                       | Manganese              |
| Vanadium                            | Nickel                          | Tungsten               |
| Nickel                              | Tungsten                        | Nickel                 |
| Tantalum and Niobium may be present |                                 | Molybdenum             |

| Cement              | Oxinium     | Stents                           |
|---------------------|-------------|----------------------------------|
| Methyl methacrylate | Niobium     | <a href="#">Stent alloys pdf</a> |
| Benzoyl peroxide *  | Zirconium** |                                  |

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|--|--|--|
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|--|--|--|

| Pacemakers        | Pacemaker Wires | Essure                             |
|-------------------|-----------------|------------------------------------|
| Platinum          | Cobalt          | <a href="#">Essure Device 2019</a> |
| Iridium           | Chromium        |                                    |
| Titanium dioxide  | Molybdenum      |                                    |
| Titanium sulphate | Nickel          |                                    |
|                   | Manganese       |                                    |

## ENVIRONMENTAL AND MEDICATION

|  |   |  |
|--|---|--|
| Lead - from water pipes                | Palladium - motorways                                 | Methyl mercury – fish                      |
| Cadmium - from polluted areas          | Inorganic mercury - crematorium                       | Aluminium - vaccines adverse effect        |
| Gluten** – if digestive issues present | Titanium dioxide – coating on vitamins and medication | Thimerosal – some vaccines and flu vaccine |

\* Only tested at Swiss laboratory

\*\* Developed for research only – not clinically validated