

German surgeons clearly prefer ceramics

More than two thirds of the bearings used in primary hip arthroplasty in Germany were ceramic-on-crosslinked polyethylene (52.5 without, 15.3% with antioxidant) in 2016. Ceramic-on-ceramic is number three on this list from the German registry **EPDR**, accounting for 10.2%, followed by ceramic-on-conventional PE. Metal heads were used in approximately 10% of the cases.

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USA: Ceramic heads No. 1 choice

In the USA, the choice of THA bearings has fundamentally changed, according to a study by **Bedard et al.** The authors analyzed 28,504 cases from the dataset of health care supplier Humana Inc. CoP increased from 6.4% in 2007 to 52.0% in 2015. The use of MoP sank from 53.6% in 2012 to 39.8% in 2015. Commenting on the increasing reports of ALVAL incidence, the authors recommend considering CoP bearings for all patients.

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AJRR: Ceramic heads on the rise

The North American registry **AJRR** shows a similar change in the choice of ball heads. In 2012, the ratio was 60.0% to 36.8% in favor of metal. In 2015, ceramic took the lead for the first time by a narrow margin (49.8% to 46.8%). In 2016 this margin has grown to more than 10% (52.8% ceramic, 42.6% CoCr) while the number of cases reported reached 41,350.

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NJR 2017: Measurably better survivorship with CoP than MoP

In this year's **NJR report**, ceramic-on-polyethylene (CoP) bearings show the lowest revision rate with a cumulative-percentage probability of revision of 3.8% at 13 years when all-cemented fixation was used (4.3% for the entire cement group). In the British registry, the cementless-fixation revision rate was approximately twice as high as that of the entire cemented group (8.7%). The cumulative probability of revision of the CoP solution improved further to 4.5%. However, ceramic-on-ceramic (CoC) bearings show an even lower probability of revision, calculated at 3.3% at 13 years, when hybrid fixation is used (5.1% for the entire hybrid group).

Head size (bearing diameter) is also a crucial factor: While head sizes of 36mm and above seem to be associated with increasingly higher failure rates when a hard-on-soft bearing is used, CoC bearings have lower failure rates with larger diameters. CoC with cementless fixation shows the best survival rate when the head size of 40mm is used. In revision arthroplasty, CoC bearings with cementless fixation show the lowest cumulative probability of re-revision when they are used in the primary procedure.

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AOA NJRR: Advantage for ceramic and large heads

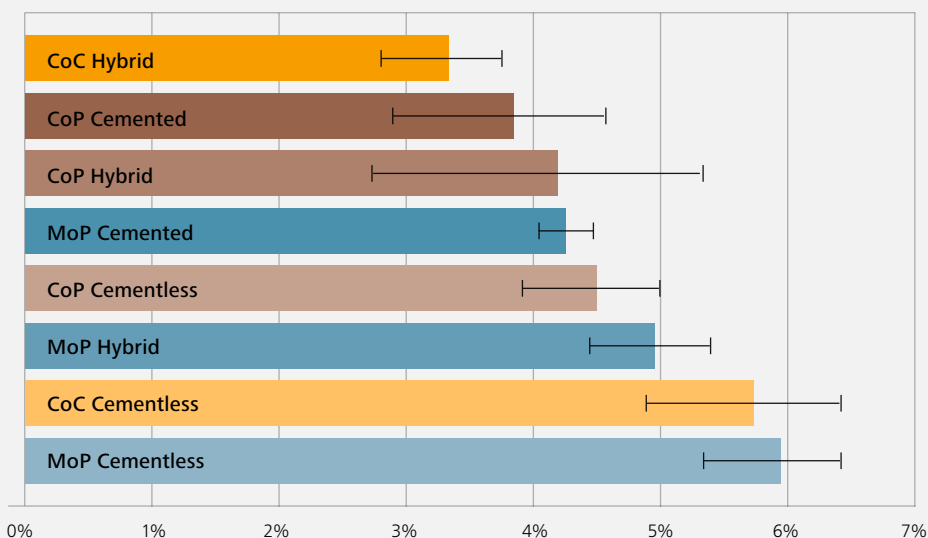
The Australian register **AOA NJRR** reports that ceramic-on-crosslinked polyethylene (CoXPE) bearings show a lower revision rate after three years than metal-on-XPE. The addition of anti-oxidant to XPE does not change the revision risk.

Mixed-ceramic heads with diameters above 32mm have a lower rate of revision than 32mm or smaller heads. There is no difference in the revision rate of 36 mm, 38mm and 40mm or larger heads.

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Ceramic bearings have lowest revision rates in NJR

British registry NJR: Cumulative-percentage probability of revision at 13 years after primary hip replacement for all cases, by fixation and bearing surface



The data used for this analysis was obtained from the NJR 14th Annual Report 2017. All analyses of NJR data were undertaken by CeramTec GmbH. The Healthcare Quality Improvement Partnership ("HQIP") and/or the National Joint Registry ("NJR") take no responsibility for the accuracy, currency, reliability and correctness of any data used or referred to in this report, nor for the accuracy, currency, reliability and correctness of links or references to other information sources and disclaims all warranties in relation to such data, links and references to the maximum extent permitted by legislation.