

Appendix

Management recommendations for patients with metal-on-metal hip replacement implants

	MoM hip resurfacing (no stem)		Stemmed MoM total hip replacements – femoral head diameter <36mm		Stemmed MoM total hip replacements – femoral head diameter ≥36mm		DePuy ASR™ hip replacements (all types)	
	Symptomatic patients	Asymptomatic patients	Symptomatic patients	Asymptomatic patients	Symptomatic patients	Asymptomatic patients	Symptomatic Patients	Asymptomatic patients
Patient follow-up	Annually for the life of the implant	According to local protocols	Annually for the life of the implant	According to local protocols	Annually for the life of the implant	Annually for the life of the implant	Annually for the life of the implant	Annually for the life of the implant
Imaging: MARS MRI or ultrasound	Recommended in all cases	No - unless concern exists for cohort or patient becomes symptomatic	Recommended in all cases	No - unless concern exists for cohort or patient becomes symptomatic	Recommended in all cases	Recommended if blood metal ion levels rising	Recommended in all cases	Recommended in all cases
1st blood metal ion level test	Yes	No - unless concern exists for cohort or patient becomes symptomatic	Yes	No - unless concern exists for cohort or patient becomes symptomatic	Yes	Yes	Yes	Yes
Results of 1st blood metal ion level test	<i>Blood metal ion level >7ppb indicates potential for soft tissue reaction</i>		<i>Blood metal ion level >7ppb indicates potential for soft tissue reaction</i>		<i>Blood metal ion level >7ppb indicates potential for soft tissue reaction</i>	<i>If blood metal ion level >7ppb then second blood test required 3 months later</i>	<i>Blood metal ion level >7ppb indicates potential for soft tissue reaction</i>	<i>If blood metal ion level >7ppb then second blood test required 3 months later</i>
2nd blood metal ion level test	Yes - 3 months after 1 st blood test if result was >7ppb		Yes - 3 months after 1 st blood test if result was >7ppb		Yes - 3 months after 1 st blood test if result was >7ppb	Yes - 3 months after 1 st blood test if result was >7ppb	Yes - 3 months after 1 st blood test if result was >7ppb	Yes - 3 months after 1 st blood test if result was >7ppb
Results of 2nd blood metal ion level test	<i>Blood metal ion level >7ppb indicates potential for soft tissue reaction especially if greater than previously</i>		<i>Blood metal ion level >7ppb indicates potential for soft tissue reaction especially if greater than previously</i>		<i>Blood metal ion level >7ppb indicates potential for soft tissue reaction especially if greater than previously</i>	<i>If blood metal ion levels rising - further investigation required including imaging</i>	<i>Blood metal ion level >7ppb indicates potential for soft tissue reaction especially if greater than previously</i>	<i>Blood metal ion level rising indicates potential for soft tissue reaction</i>
Consider need for revision	If imaging is abnormal and/or blood metal ion levels rising		If imaging is abnormal and/or blood metal ion levels rising		If imaging is abnormal and/or blood metal ion levels rising	If imaging is abnormal and/or blood metal ion levels rising	If imaging is abnormal and/or blood metal ion levels rising	If imaging is abnormal and/or blood metal ion levels rising

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Appendix

Table footnotes:

- Blood metal ion testing to be in whole blood
- 7 parts per billion (ppb) equals 119 nmol/L cobalt or 134.5 nmol/L chromium

Guidance notes

- On the basis of current knowledge, this chart has been produced as a guide to the management of these patients. It will not necessarily cover all clinical situations and each patient must be judged individually.
- MARS MRI scans (or ultrasound scans) should carry more weight in decision making than blood ion levels alone.
- Patients with muscle or bone damage on MARS MRI are those of most concern. A fluid collection alone around the joint in an asymptomatic patient, unless it is very large can be safely observed with interval scanning.
- Local symptoms include pain and limping.