

Pregnancy - A guide for surgical trainees and trainers

This guide is applicable to surgery only. For more generic guidance on maternity leave please refer to your training region's guidance and for return to work guidance please refer to the JCST's [Return to Training Guidance](#) and the following from the GMC and the Statutory Education Bodies' websites:

- General Medical Council's [Return to work](#)
- Health Education England's [Supported Return to Training](#)
- Scotland Deanery [Return to work](#)

Target Audience

Postgraduate Deans, Heads of School (or equivalent), Training Programme Directors (TPDs), Educational and Clinical Supervisors, supervising clinicians, hospital human resources teams, trainees, clinical management teams, statutory education bodies.

Aims

To provide all involved in surgical training with guidance regarding surgical trainees who are pregnant.

Guidance

1. Specific consideration should be given to:
 - a. Physical demands (moving and handling, on call shifts and long durations of standing)
 - b. Specific hazards (radiation, orthopaedic cement, iodine, high risk cases such a blood borne infections and other infectious diseases)
 - c. General conditions (lone operating, out of hours operating, emergency duties within and outside normal working hours, adequate rest)
 - d. Mental demands of the post
2. If the trainee changes hospital site during their pregnancy then a further risk assessment is required based on the new position and work environment.
3. There is no legal obligation to use radiation in pregnancy, but all doctors need to follow the General Medical Council's Good Medical Practice requirements. Appropriate arrangements must be in place if radiation is required for best patient care. Should a pregnant trainee choose to continue using radiation, the Ionising Radiation (Medical Exposure) Regulations (IRMER) radiation officer for their employer should be contacted. A radiation dosimeter should be provided and monitored with a maximum dose exposure of 1mSv over a 9 month period.

The radiation badge should be worn at the foetal level inside the lead gown. Double lead gowns (0.5mm lead ideally a top and skirt or apron should be worn and trainees should stand 2m away from the radiation source when possible).^{1,2,3}

4. Pregnant trainees should be advised that there is generally consistent evidence that prolonged standing (>3h) carries no more than a small risk of pre-term birth or low birth weight. National guidance nevertheless does suggest minimising prolonged standing where possible, while leaving the final decision to the pregnant employee. ⁴
5. Pregnant trainees in specialties which use polymethyl methacrylate (PMMA) cement (e.g. Trauma and Orthopaedics) should be offered the option to avoid exposure to it. If pregnant trainees choose to undertake procedures using PMMA, vacuum mixing, personal protective equipment, Charnley hoods and laminar flow should be used to minimise the risk of exposure. It is unlikely that exposure would breach the recommended daily limit.

PMMA may be fetotoxic at levels >1000 parts per million (PPM.) PMMA concentration of 50-100 ppm in the breathing zone of a surgeon has been reported. Use of modern methods including vacuum mixing, surgical helmet and local surgical field ventilation reduced this to an undetectable level^{11, 12}. The U.S. Environmental Protection Agency recommends exposure to a time-weighted average of no more than 100PPM of PMMA over an eight-hour work day. ^{5,6}

6. Iodine based antiseptic scrub solutions are not recommended for use during pregnancy. There is sufficient evidence that iodine may be absorbed to affect the foetal thyroid in the second and third trimester. It is also not recommended for regular or excessive use during breast-feeding ^{7,8}
7. Consideration should be given during the risk assessment to provisions being put in place to minimise risk to patients and trainees arising from such symptoms as fainting or sickness during lone operating.
8. Full personal protective equipment including facemasks should be worn for all surgical cases.
9. Pregnant trainees where possible should not undertake high-risk cases (involving potential exposure to blood borne infection) due to the risks associated with cross infection or prophylactic treatment if required. There is no post exposure prophylaxis available for Hepatitis C and antiretroviral prophylaxis for HIV exposure may have a risk of drug toxicity to the foetus^{5, 6}
10. Flexibility in job planning should exist to allow pregnant trainees to be reallocated to lower risk sessions, provided it is not detrimental to the education or training of other doctors within the department.

Useful Links

- [Association of Surgeons in Training \(ASiT\)](#)
- [British Orthopaedic Trainees Association \(BOTA\)](#)
- [British Medical Association](#)
- [Royal College of Surgeons of Edinburgh](#)
- [Royal College of Surgeons of England](#)
- [Royal College of Physicians and Surgeons of Glasgow](#)
- [Royal College of Surgeons in Ireland](#)

Acknowledgement

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References

1. British Institute of Radiology, The Royal College of Radiologists. The College of Radiographers. Pregnancy and Work in Diagnostic Imaging Departments 2nd Edition. Available from: https://www.rcr.ac.uk/system/files/publication/field_publication_files/Pregnancy_Work_Diagnostic_Imaging_2nd.pdf [Accessed 23rd March 2019]
2. British Institute of Radiology, The Royal College of Radiologists. The College of Radiographers. Pregnancy and Work in Diagnostic Imaging Departments 2nd Edition. Available from: https://www.rcr.ac.uk/system/files/publication/field_publication_files/Pregnancy_Work_Diagnostic_Imaging_2nd.pdf [Accessed 23rd March 2019]
3. RCS England. Pregnancy and Maternity. Available from: <https://www.rcseng.ac.uk/-/media/files/rcs/careers-in-surgery/wins/pregnancy.pdf>. [Accessed 20 May 2019]
4. NHS Plus, Royal College of Physicians, Faculty of Occupational Medicine. *Physical and shift work in pregnancy: occupational aspects of management. A national guideline*. 2009. Available from: <https://www.nhshealthatwork.co.uk/images/library/files/Clinical%20excellence/Pregnancy-FullGuidelines.pdf> [Accessed 23rd March 2019]
5. Darre E, Jergensen LG, Vedel P, Jensen JS. Breathing Zone Concentrations of Methyl methacrylate Monomer During Joint Replacement Operations. *Pharmacology & Toxicology*. 1992; 71: 198-200.
6. Schlegel UJ, Sturm M, Ewerbeck V, Breusch SJ. Efficacy of vacuum bone cement mixing systems in reducing methyl methacrylate fume exposure. Comparison of 7 different mixing devices and hand mixing. *Acta Orthop Scand*. 2004; 75 (5): 559–566 559
7. National Institute Clinical Excellence. British National Formulary. Povidone-Iodine. Available from: <https://bnf.nice.org.uk/drug/povidone-iodine.html> [Accessed 23rd March 2019]
8. Ecolab. Videne. Povidone-Iodine 7.5% w/w surgical scrub. Manufacturer Guidance. Available from: https://en-uk.ecolab.com/-/..../Ecolab/Ecolab.../MEA_Videne-Surgical-Scrub-pdf.pdf [Accessed 23rd March 2019]

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