



# Risk assessment

A full risk assessment must be carried out before embarking on any practical microbiology work. More information on the factors listed in the following table is contained in 'Topic 15 Microbiology and biotechnology' of the key reference Topics in Safety 3rd ed. (ASE, 2001) and is also available on the MiSAC web site Health & safety page. (See [www.misac.org.uk](http://www.misac.org.uk).)

## Factors to be considered in risk assessment

Factor	Relevance
Good microbiological laboratory practice (GMLP)	Protection of operators (students, teachers and technicians)
Level of practical work (Levels 1, 2 and 3)	Degree of risk of microbial culture; expertise of teacher and technician; student age and level of class discipline
Choice of micro-organisms (ACDP Hazard Group 1)	Cultures that present minimum risk when GMLP is followed
Source of cultures	Reputable specialist supplier or approved environmental sample
Type of investigation/activity	Adequate containment of cultures; practical work or demonstration
Choice of culture medium	Some culture media are designed only for professional use for selecting for the growth of pathogens, i.e. not in ACDP Hazard Group 1
Incubation conditions	Temperatures above 30°C and lack of oxygen may allow the growth of pathogens, i.e. not in ACDP Hazard Group 1
Volume of culture	Increased risk when dealing with and disposing of large volumes of liquid culture
Laboratory facilities	Suitable level of containment for practical work
Equipment	Adequate for purpose
Disposal of contaminated materials	Elimination of risk to others
Expertise of teacher and technician	Competence and suitable training in techniques and procedures appropriate to the level of work (Levels 1, 2 and 3)
Student age and class discipline	Level of work (Levels 1, 2 and 3); confidence in class discipline
Sources of competent advice	ASE*, CLEAPSS*, MiSAC, NCBE, SSERC* (*members only)
Useful check list	CLEAPSS <i>Laboratory Handbook</i> ; ASE <i>Topics in Safety</i> , 2nd ed. (1988)
Key reference	ASE <i>Topics in Safety</i> , 3rd ed. (2001)

Key to abbreviations: ACDP, Advisory Committee on Dangerous Pathogens; ASE, Association for Science Education; MiSAC, Microbiology in Schools Advisory Committee; NCBE, National Centre for Biotechnology Education; SSERC, Scottish Schools Equipment Research Centre. For contact details see the MiSAC web site Links page. (See [www.misac.org.uk](http://www.misac.org.uk).)

This table of risk assessment factors was developed from that in *Basic Practical Microbiology - a Manual* (Society for General Microbiology, 2006) which was based on a suggested risk assessment strategy in the 2nd edition of *Topics in Safety* (ASE, 1988).