Recommended procedure

Ear examination

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General foreword

This document presents a Recommended Procedure by the British Society of Audiology (BSA). A Recommended Procedure provides a reference standard for the conduct of an audiological intervention that represents, to the best knowledge of the BSA, the evidence-base and consensus on good practice given the stated methodology and scope of the document and at the time of publication.

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1. Introduction

1.1 Background and scope

The purpose of this document is to describe guiding principles for safe and effective ear examination (also known as otoscopy) carried out in any audiological context, with both children and adults. The specific motivation, and the optimal approach, for examining an ear varies between examinations, and it is not the purpose of this document to provide guidance on specific circumstances or on interpretation. It is essential that the ‘examiner’ (i.e. the person conducting the examination) or the person supervising the examination uses her/his professional judgement when deciding on the particular approach to be used with each ‘subject’ (i.e. the person who is being examined) given the specific circumstances, while applying the principles described here.

The term ‘shall’ is used in this document to refer to essential practice, and ‘should’ is used to refer to desirable practice.

1.2 Development of the recommended procedure

Unless stated otherwise, the principles described here represent the consensus of expert opinion and received wisdom as interpreted by the Professional Practice Committee (formerly Education Committee) of the British Society of Audiology (BSA) in consultation with its stakeholders (see Appendix A). The document was developed in accordance with BSA (2003).

2. General considerations

The examiner shall be competent, or supervised by someone who is competent, in ear examination for the purpose in hand. Competence should be evidenced by sufficient and relevant training, experience and assessment (e.g. BSA, 2004).

The examiner shall adopt procedures relating to hygiene and infection control as described in BSA (1998) and by relevant local policies, considering, at least, hand-cleaning prior to and after examination, the covering of breaks in the skin, the avoidance of direct contact with bodily fluids and the cleaning or disposal of specula. The same speculum shall not be used for different subjects unless it has been appropriately cleaned (see previous statement). The same speculum
shall not be used for each ear of a subject where there is a risk of transferring an infection between the ears.\(^1\)

The examiner shall identify and adopt an effective communication strategy with the subject and/or the person responsible for the subject. This shall take into account the subject’s age (for children), hearing and possible communication difficulties, as well as the visibility of the examiner’s face during the examination.

The examiner shall make notes, such as of information supplied by the subject or person responsible for the subject, observations during the examination, any action taken (e.g. medical attention or aural care) and any advice obtained (e.g. related to medical attention) or given (e.g. related to the management of ear wax). The procedures for record-keeping shall take into account issues related to confidentiality, data protection and the recording of information for future reference.

### 3. Subject preparation

Before examination, the subject, and/or person responsible for the subject, should be asked if he/she currently has any ear-related symptoms (including discomfort, pain and discharge), is currently being treated for any ear-related problems or has previously had surgery involving the ears. Any symptoms, or other relevant issues, should be explored through questioning as appropriate.

The examiner shall explain, and where necessary demonstrate, the procedure to the subject and/or person responsible for the subject. Where possible, the subject should be instructed to report immediately any discomfort or pain experienced during the examination. Informed consent shall then be obtained (e.g. verbally) from the subject or person responsible for the subject.

The subject should be seated comfortably and should remain motionless during examination. Young children may need to be held by an appropriate adult, which should be the person responsible for the child. For example, the child could be seated sideways on the adult’s lap, with the child’s hands secured by one hand and the child’s head held against the chest with the other hand. In older children and adults, an instruction to remain still will usually suffice. Any objects that may interfere with the examination (e.g. a hearing aid) should be removed.

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\(^1\) As judged by the examiner. For example, on the basis of examination of the first ear, the subject’s symptoms or medical history or advice provided by another (e.g. medical) professional. If the examiner is in doubt, he/she shall seek advice or use a separate speculum for each ear.
4. Examination

It is usually preferable to examine first the ear least likely to have an observable abnormality, followed by the other ear. It might be necessary to abort the procedure at any stage if undue discomfort, pain, bleeding or related signs and symptoms occur during the examination; it might also be necessary to seek immediate medical attention.

4.1 Examination of the pinna and adjacent features

When examining an ear, it is usually preferable to begin with the skin around, behind and adjacent to the pinna. The pinna should be examined thoroughly, including the top and rear and the entrance to the ear canal. It is not usually necessary to use magnification at this stage, although an additional light source might be helpful.

4.2 Examination of the ear canal and tympanic membrane

The ear canal and tympanic membrane should then be examined. This may not be possible in all cases, for example, due to the absence of an ear canal, due to the presence of bandaging or when doing so might cause pain or undue discomfort. Particular care should be taken if the subject has recently undergone ear surgery, might not remain still during examination or is anxious about undergoing the procedure.

The ear canal and tympanic membrane should be examined using a device that provides appropriate magnification and illumination, has been produced for the purpose of ear examination and meets relevant safety standards, referred to hereafter as an ‘otoscope’. An otoscope that employs a separate viewing screen instead of a built-in viewfinder, such as a computer monitor, will be referred to as a ‘video otoscope’. Before use, the examiner shall ensure the otoscope is operational and that any relevant safety checks have been conducted.

The examiner shall adopt a stable position when examining the ear using an otoscope. This involves the examiner taking necessary precautions to minimise the risk of harming the subject, or her/himself, through the loss of balance for example. For example, the examiner should not stand bent-over.

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2 For example, so as to detect signs of previous ear surgery, signs of inflammation involving the ear and other abnormalities.
To start, the examiner shall select an appropriately sized speculum, based on the initial examination of the entrance to the ear canal (Section 4.1) and the need to obtain adequate illumination. This speculum shall then be securely, and hygienically, attached to the otoscope. The otoscope shall be held by the examiner in such a way as to enable secure bracing against the subject’s head in order to avoid injuring the ear if, for instance, the subject makes a sudden movement. The upper rows of Figures 1, 2 and 3 illustrate examples of safe practice for several types of otoscope; the lower rows illustrate unsafe practice with no bracing. The pinna should be manipulated in such a way as to attempt to align the cartilaginous portion of the ear canal with the bony portion, without causing undue discomfort (Figures 1, 2 and 3)\(^3\). Any discomfort or pain produced by doing so should be noted.

The examiner shall then carefully guide the tip of the speculum (attached to the otoscope) into the ear canal while observing the ear (not necessarily through the viewfinder of the otoscope). The examination of the ear canal and tympanic membrane shall be conducted carefully and safely, taking into account the size, shape, orientation and condition of the ear canal and the presence of wax or foreign bodies. It shall also take into account that the bony portion of the ear canal is especially sensitive and its surrounding skin vulnerable to trauma. (Particular care is necessary with the manipulation of the otoscope if the examiner is using a video otoscope, as the tester might be looking away from the ear, and the subject, at the screen for example.) This examination should also be carried out in a thorough and systematic manner given the purpose in hand\(^4,5\). On completing the examination, the otoscope (including the speculum) shall be removed from the ear canal.

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\(^3\) The most effective manipulation of the pinna varies between subjects, particularly between adults (where manipulation is typically upwards and backwards) and young children (where manipulation is typically backwards and sometimes also downwards).

\(^4\) A general examination should seek to detect, if present, foreign bodies, abnormalities of the ear canal (such as discharge/debris, swelling, bleeding) and abnormalities of the tympanic membrane or middle ear (including swelling, perforation, retraction, discolouration, the absence of visible malleus or other middle-ear landmarks and the presence of fluid).

\(^5\) The entire ear canal and tympanic membrane might not be visible at once. It is therefore often necessary to observe different portions of the ear canal and tympanic membrane at different times, such as by gently manipulating (e.g. angling) the otoscope, by the examiner changing her/his head position or by the examiner asking the subject to lean her/his head towards the opposite ear.
Figure 1

The pictures in the top row illustrate safe practice, with the otoscope braced securely against the subject’s head by the examiner’s hand; it also illustrates appropriate manipulation of the subject’s pinna. The pictures in the bottom row illustrate unsafe practice with no bracing.
Figure 2
An example with a video otoscope. Arrangement as with Figure 1.
Figure 3
A second example with a video otoscope. Arrangement as with Figures 1 and 2.
4.3 Recording, reporting and managing the findings

The examiner should note her/his observations immediately after carrying out the procedure. Depending on the circumstances, it might also be appropriate for the examiner to make a judgement as to the status of an ear, such as the presence of an abnormality or disease. It might also be necessary for the examiner to take further action, such as a referral for medical attention, in consultation with, and with the consent of, the subject.

If a printed or electronic copy of images is obtained during examination, these should be stored together with the identification details of both the subject and examiner as well as the date and time of the examination.

5. References

British Society of Audiology (1998) Recommended minimum procedure for the cleaning of specula, etc., and associated infection control. British Society of Audiology; Reading.


Appendix A. Committee members and stakeholder involvement

Membership of the Professional Practice Committee (PPC) during the development and review of the document:

- Clinical Scientist, Manchester
- Head of Audiology Service, Merthyr Tydfil
- Technical Director of Equipment Supplier, London
- Clinical Scientist (Audiology), Cambridge
- Director of Equipment Supplier, Stockport
- Hearing Aid Audiology Course Leader, Cambridge
- Hearing Aid Dispenser and Senior Audiologist, Tunbridge Wells
- Clinical Scientist (Audiology), London
- Head of Audiology Service and Hearing Aid Dispenser, Swindon
- Audiological Scientist/Teacher, Gloucester
- Audiology Lecturer, Southampton (lead author)
- Clinical Scientist (Audiology), Southampton

Stakeholder consultation was from June 2009 to 30th September 2009. The draft document was published in BSA News (Sept 2009) and was available via the BSA website. An electronic copy of this draft and the full list those invited to comment on the draft are available on request.

Comments were obtained from 30 individuals/groups, the primary perspectives of whom were stated as: audiologist (12), medic (physician/surgeon) (8), more than one perspective given (3), professional body/society (2), charity (1), student (1), University (1), other (1), not stated (1). More than a single perspective: academic, audiologist and course provider (1), audiologist and hearing-aid audiologist/dispenser (1), academic and medic (1). An electronic copy of the anonymised comments, and the responses to these by the PPC, are available on request.