35 Questions to ask yourself when designing products for people with sight loss, disabilities and older people

This checklist is provided as a basic guide when designing products

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Introduction

This document/checklist is designed to provide a basic guide when designing products for people with sight loss, also considering other disabilities and age related disabilities. It does not claim to be a complete list (as it would be much longer) but is intended to make people think about the potential issues people with sight loss might come across.

This document is set out in a table and has a check box after each issue that can be checked. A 'yes' answer is 'good', a 'no' answer needs to be looked at.

Standards		
1. Does the product (and its instructions) meet current UK and EC Health and Safety regulations, directives and standards applicable to it?	Yes	No
Packaging		
2. Does the packaging allow for easy access to the product, its instructions and its component parts by your customer? Ensure you check any relevant standards, particularly for pharmaceutical packaging.	Yes	No
Instructions		
3. Could a blind or partially sighted person access the instructions? Consider using large print (a minimum of 16 point Helvetica or Arial font), audio, braille and electronic formats. Ask RNIB about our transcription services.	Yes	No
4. Are the instructions straightforward and easy to understand? Extensive use of diagrams in instructions is generally not very helpful for people with serious sight problems but could benefit people with dyslexia and learning disabilities, as well as the general public. It is useful to describe a diagram as well to cater for most.	Yes	No
5. Is there a customer helpline for this product?	Yes	No
Handling		
6. Is the product easy to orientate? Could a visually impaired and/or older person easily locate the front, back, top, and bottom of the product?	Yes	No

7. Does the product require little physical strength to use? Consider for example, an older person with arthritis – would they be able to lift, open, turn, grip or rotate the product to use it effectively?	Yes	No
8. Does the product have smooth edges and surfaces (not sharp or rough) and is without finger traps? Consider that an older and/or visually impaired person may have limited vision, reduced reaction time, motor control and dexterity.	Yes	No
Cognitive/mental requirements of the product		
9. Is the way the product works straightforward, intuitive and easy to remember? Consider that older people may take longer to learn new things, make information choices and understand complex control panels since their information processing skills may be slower than those of younger people.	Yes	No
Visual information		
10. Are printed characters legible and clearly visible? Consider using clear, uncomplicated fonts in a mixture of upper and lower case lettering in a size as large as possible (given for example the button size). A minimum of 16 point in size would be ideal, but should at least be consistent across button groupings (e.g. number pad 16 point, menu buttons 12 point). Consider materials used. Is the ink going to rub off and become illegible with time? Are the materials very shiny, making printed information difficult to read due to reflections and causing discomfort due to glare?	Yes	No
11. Are controls clearly visible and easily distinguishable? Consider large buttons, varied shapes and sizes and colour contrast.	Yes	No
12. Do the colours contrast enough? Consider the colour and tonal contrast of buttons, controls and printed labels against their backgrounds.	Yes	No
13. Are electronic displays and/or indicator lights legible and clearly visible? Consider contrast with background - ideally a minimum character height of 10-20mm for liquid crystal displays (LCDs). Consider that light emitting diode (LED) displays are usually brighter and more effective than LCDs for visually impaired	Yes	No

people.		
14. Are status, warning and indicator lights clearly visible and distinguishable from one another? Consider brightness and colour of indicator lights against their background. Consider making them different using different sizes, shapes, and signal frequencies/patterns and so on.	Yes	No
15. Are symbols clear enough to be read by customers who are older and/or have sight loss? Consider size, colour contrast and so on and the fact that not everyone is familiar with technological symbols	Yes	No
Tactile information		
16. Is Braille the correct tactile marking to use? Consider whether Braille is the correct type of tactile information to use, or that other tactile markings would be more appropriate, fit better on the product and reach more people as only a limited number of people read Braille (see issues 18, 19, 20).	Yes	No
17. If Braille is found to be the appropriate tactile marking to use, is it legible and optimally positioned in its role as labelling? Consider the correct standard Braille 3D profile Is it near enough to be identified with the feature for which it serves as a label, without being too close as to making it difficult to read? Braille should be located in clutter-free areas.	Yes	No
18. Are the tactile markings distinguishable? They must always stand proud of the product/control surface to be most effective (tactile markings should be embossed and not engraved). Consider that some people with diabetes lose the sensitivity in their fingertips – so tactile markings should be big and bold (tactile markings should, in general, be larger than their printed equivalent and should as a guide be raised between 1 and 1.5 mm, with a minimum of 0.5 mm which is the Braille standard height).	Yes	No
19. Are the tactile markings optimally positioned in their role as labelling? Is it near enough to be identified with the feature for which it serves as a label, without being too close as to making it difficult	Yes	No

to feel? Tactile markings should be located in clutter-free areas.		
20. If you have used contrasting textures can these be readily identified by someone with poor sensitivity in their fingers? Consider that sensitivity in the fingertips may become reduced with age (due to diabetes and so on) so when textures that supply information about a product are used, they must be limited in number and be very different from each other	Yes	No

Controls/Indicators

21. Are the controls easily distinguishable by touch? Consider that some people may have reduced sensitivity in the fingertips (due to diabetes and so on).	Yes	No
22. Are the controls easy to operate? Consider if they are located in an accessible place. Consider the manual strength and dexterity of someone with arthritis or someone who has suffered a stroke.	Yes	No
23. Is the pressure required to operate buttons/controls OK? Very light pressure does not give adequate tactile feedback. Very heavy pressure may reduce tactile sensitivity of a Braille reader's fingers after prolonged use. Heavy pressure will be difficult for people with reduced strength or arthritis.	Yes	No
24. Are the controls straightforward and simple to understand? Don't have multi-function/mode buttons, keep irrelevant and/or decorative information to a minimum to reduce confusion, allow time for responses and learning the task. Are controls well-grouped and logical in terms of importance, order of use and frequency of use?	Yes	No

Auditory information

25. Are audible tones emitted by the product readily distinguishable from each other, and from any other audio emitted by the product? Audio tones should be intuitive (e.g. don't use a discordant note to indicate a successful completion of an option).	Yes	No
26. Is the speech quality suitable for its intended market? Consider that with age-related hearing loss, high-frequency tones are the first to be lost.	Yes	No

Consider the nationality and age group of the user group. For example, English people over the age of 65 generally prefer an English (British accent) male voice above others because it is familiar, easy to understand, and adds perceived 'quality' to the product		
27. Is the volume range suitable for the intended customer group? Consider hearing impaired individuals – is the volume adjustable and sufficient for this customer group? Consider privacy and convenience of use for the product in mixed user groups – headphones can offer privacy and convenience	Yes	No
28. Is the product compatible with hearing-aids? Consider inductive couplers on telephones, loop systems, and so on. Also consider the practicality/detrimental effects of some equipment used in conjunction with hearing aids. For example, in-the-ear headphones may not be suitable.	Yes	No
29. Are any vibration patterns emitted from the product readily detectable and distinguishable from one another?	Yes	No
Cleaning		
30. Is the product easy to clean and maintain? Does the product require disassembly and re-assembly for cleaning? Would an older and/or visually impaired person be able to carry out this task?	Yes	No
Power Supply		
31. Could an older person and/or person with sight loss replace batteries required for the product with ease? Consider how the battery compartment opens bearing in mind those who are visually impaired, and/or have reduced manual dexterity and reaction times. If battery powered - are the batteries readily available on the high street, and of an affordable type? Consider using a battery low warning indicator (audible or LED). Consider using re-chargeable batteries and a mains adapter.	Yes	No
32. Are power leads and their respective sockets readily distinguishable and/or clearly labelled?	Yes	No

33. Are mains power connections robust? Consider also someone who is older and/or has sight loss who might have slow reaction times, reduced mobility and so on. (Cordless appliances, retractable leads and coiled flexes are most appropriate.)	Yes	No
Physical Dimensions and Build		
34. Is the weight and size of the product suitable for the intended user group(s)? Consider that as people age, their bone density and muscle strength decreases.	Yes	No
35. Is the product durable enough, given the anticipated everyday wear and tear by people with sight loss and older people? Consider that tactile markings will be rubbed over a lot and should not wear down. Consider that printed information will potentially be touched more (when orientating the product) in order to get a good look and needs to stay clear in order to be usable.	Yes	No