

Late addition to the GeronTechnoPlatform of Vancouver, Canada, May 2010

P. GUILLAUME. MEM-X: a vocal memory aid for elderly people. *Gerontechnology* 2010; 9(4):490; doi:10.4017/gt.2010.09.04.002.00. **Purpose** MEM-X(R) is a patented¹ vocal re-minder that helps elderly people to remember important tasks by pre-recorded vocal messages. By construction, MEM-X enables a person having memory problems and a helper to use it via differentiated accesses. Main intended users are people suffering from MCI or early Alzheimer's disease (score above MMSE 19). The device is programmed locally by a helper with a voice known to the person being helped. Second type of users are elderly people taking medication several times per day (e.g. for Parkinson, diabetes), but involved in social activities that might distract them from taking their medication. **Method** MEM-X dimensions: 115x38 x17mm; weight 60g. The back face of MEM-X is meant for the helper to record vocal messages, and to program date/time for their delivery via a keyboard and an LCD display protected by a flap. An SOS key releases specific messages for the helper (who to call, what to do in a crisis situation). The front face is meant for the person having memory problems. It comprises a loudspeaker and a central blue 17x12mm button that stops the ring and releases the message, and is worn around the neck with a supplied lanyard. A standard 1.5V AAA battery is supplied that lasts on the average 1.5 months. A side standard headphone connector enables connection of an amplifier for people with hearing problems (*Figure 1*). Volume is adjustable for ring and voice separately. When the person has an action to perform, the ring goes on until the user presses the blue button. The vocal message is then delivered via the loudspeaker. Messages can be replayed by pressing the button again until the next message replaces it. Three different types of messages can be recorded: (i) For a specific date and time (appointment, anniversary,...), (ii) Daily messages for a specific time (medication, 'drink water' reminders,...), and (iii) Weekly messages for a specific day and time (wake-up message, weekly appointments). MEM-X can store up to 15 minutes speech (90 messages of 10 seconds), with no limitation in message length. It can be programmed until the year 2099. The product was evaluated in a 2008 study conducted jointly by the AGEIS laboratory, and the Geriatrics department of Charles Foix Hospital; 5 pairs of helper/helped tested MEM-X over a 1 month period. Helped: mean age 80, 2 men 3 women, 1 MMSE =19, 4 MMS >= 20, 4 early Alzheimer, 1 Parkinson with associated memory problems. Helpers: aged 52-60 years, 1 man 4 women, not retired. In order of frequency messages recorded concerned: appointments, social events, medications, housekeeping tasks. **Results & Discussion** 1 pair gave up the trial because of too high complexity. Among the other 4 pairs, the product was reported as useful, intuitive and valuable for people with MMSE 19 or over, helped by a person having no mental nor physical disability². MEM-X gives them confidence, reminds them to drink, to eat, and to take their medication on time, reducing their stress and improving their self image. Most of the technical issues discovered during testing have been solved in the current product. 2000 MEM-X have been sold since then, and a satisfaction survey is currently ongoing.

References

1. European patent nb EP1497736, US patent nb 10/506.672
2. Carre M, Poulain A. Rapport d'évaluation du Produit MEM-X. Paris: Agéis/APHP ; 2008 (April 8); <http://www.mem-x.com/images/stories/docs/rapport%20test%20mem-x%20aphp.pdf>; retrieved April 23, 2010

Keywords: memory aid, vocal reminder, Alzheimer, Parkinson, diabetes

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Figure 1. MEM-X; left: front face; right: back face with flap opened