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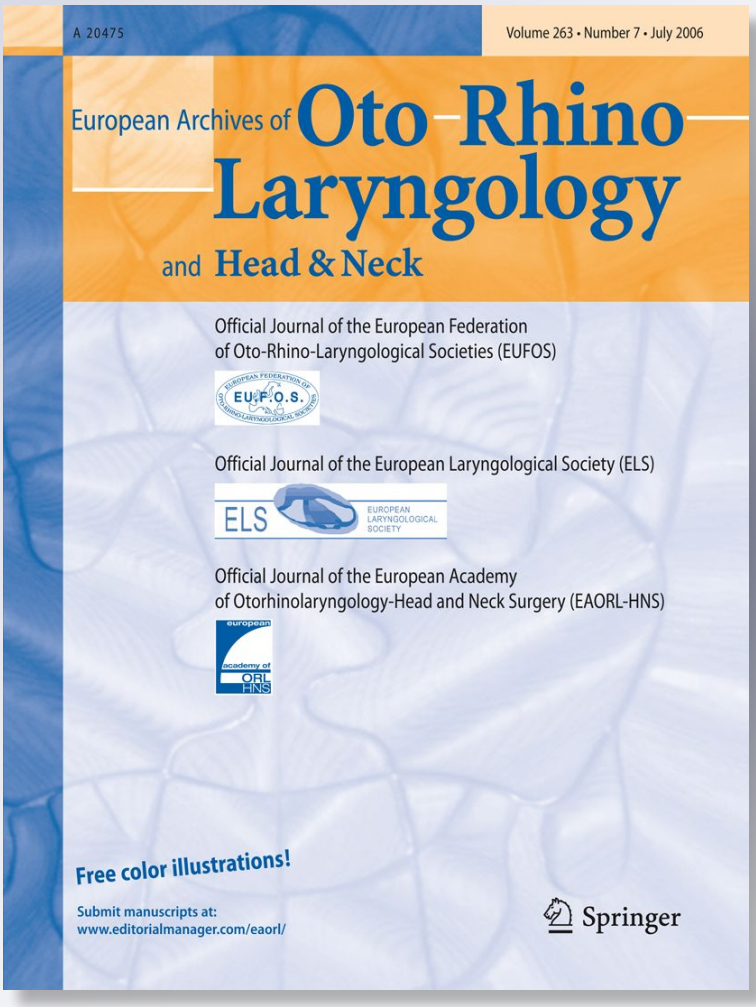

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LETTER TO THE EDITOR

Do the ears grow with age?

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Studying ear dimensions in the population of a specific geographic area helps in the planning of both reconstructive and aesthetic operations.

We have researched on the anthropometrical measurements of the auricle in a normal Caucasian population of the South of Italy; this paper was presented at the 56° Italian meeting of Plastic, Reconstructive and Aesthetic Surgery Society (SICPRE) in September 2007.

We evaluated the mean dimensions of the ear and their relationship with age, sex and height. Other authors have studied the mean dimensions of normal auricles in a North America population [1], while Gualdi-Russo [2], Ferrario et al. [3] and Sforza et al. [4] published on the mean dimensions of the ear in a Caucasian Italian population.

In our study, we measured the dimensions of both ears in 740 healthy subjects (380 men, 360 women). We used a direct manual measurement technique based on the establishment of four classical landmarks, two for the length (super-aurale and sub-aurale) and two for the width (pre-aurale and post-aurale) and on the calculation of the distances between them. We also considered independently the lengths of the earlobe and of the cartilaginous part of the ear. We classified the subjects according to gender, height and age; we ended with ten groups for each gender classified by height in <170 cm and >170 cm for males and in <160 cm and >160 cm for females and by age as follows: 15–30 years, 31–45 years, 46–60 years, 61–75 years and >75 years. Results are showed in Tables 1 and 2.

We found that both ear length and ear width were larger in men than in women ($p < 0.001$) and were larger in taller subjects than in shorter ones ($p < 0.001$). We also found that ear length and width increased with age in both genders even in subjects over 75.

Recently Alexander et al. [5], in a research conducted with a very accurate measurement method, commented about ear growth. They reported on the age related modification of both ear soft and cartilaginous tissues supporting the theory that the way the ear size increases may be attributable to different facts including the reduced resilience and elasticity of skin with age [6], the reduced tensile strength of connective tissue [7] and the gravitational forces over time [8].

We also want to stress that the ear length increasing along with aging cannot just be attributed to earlobe lengthening; in fact, similarly to Alexander et al., our separate measurements of the length and width of the cartilaginous portion of the ear and of the earlobe length showed that they both grow with age ($p < 0.001$ for earlobe, $p < 0.01$ for cartilaginous portion) even if the soft tissue portion of the ear suffers much more from the gravitational forces. This is in contrast with the paper by Brucker et al. [1], on a North America population, where they stated that the lobule was the only ear structure that changed significantly with age.

In conclusion, we feel that the ear continues to grow with age, even if a more appropriate method of studying the population should include measurements and follow ups of the same subjects during their entire life.

Conflict of interest None.

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Table 1 Males : ear dimension and age ($n = 380$)

Age (years)	Average length ± SD	Average width ± SD	Average cartilaginous length ± SD	Average earlobe length ± SD
15–30	64.6 mm ± 3.8	32.5 mm ± 3.9	48.5 mm ± 4.2	16.1 mm ± 1.5
31–45	68.8 mm ± 4.3	32.9 mm ± 3.2	49.9 mm ± 3.0	16.9 mm ± 2.2
46–60	69.2 mm ± 4.1	34.5 mm ± 4.2	50.0 mm ± 3.1	19.4 mm ± 1.9
61–75	74.8 mm ± 3.5	37.6 mm ± 4.2	52.1 mm ± 2.9	22.6 mm ± 2.4
>75	76.9 mm ± 5.3	37.6 mm ± 4.0	57.0 mm ± 3.5	24.3 mm ± 2.8
All	69.5 mm ± 6.2	34.5 mm ± 4.4	50.1 mm ± 3.5	19.0 mm ± 3.8

Table 2 Females: ear dimension and age ($n = 360$)

Age (years)	Average length ± SD	Average width ± SD	Average cartilaginous length ± SD	Average earlobe length ± SD
15–30	61.4 mm ± 3.6	29.3 mm ± 3.3	46.7 mm ± 2.6	15.2 mm ± 1.0
31–45	62.5 mm ± 7.3	30 mm ± 2.8	47.5 mm ± 3.1	16.4 mm ± 1.7
46–60	65.2 mm ± 3.2	31.3 mm ± 2.5	47.7 mm ± 2.4	17.2 mm ± 1.5
61–75	69.5 mm ± 3.7	32.9 mm ± 2.6	49.9 mm ± 2.7	18.8 mm ± 1.6
>75	71.1 mm ± 4.1	33.6 mm ± 3.0	50.1 mm ± 2.8	22.7 mm ± 2.5
All	65.1 mm ± 5.8	34.5 mm ± 4.4	48.0 mm ± 2.9	17.3 mm ± 2.6

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