Aerodynamic Parameters Across Age Groups

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The study was conducted to establish norms on terms of aerodynamic parameters using Aerophone II, as aerodynamic parameters have been found to be providing useful information in the assessment and treatment of dysphonics.

Thirty normal females and thirty normal males were taken for evaluating the aerodynamic parameters using Aerophone II (voice function analyzer).

The selection of subjects was randomly done in the range of 17 years - 24 years.

The parameters measured were:

-> Peak airflow during expiration

-> Vital capacity and duration of exhalation

-> Mean fir flow rate, phonation time, SPL range, under most comfortable phonation condition.

-> Peak flow of air, volume of air, duration, SPL, pressure,, vocal efficiency while uttering /ipi/, /ipi/.

Statistical analysis revealed:

-> Significant differences in males and females between

-> Vital capacity

-> Maximum peakflow

-> Duration

-> Phonation time

-> Mean air flow rate

-> Volume

-> No significant difference

-> In vocal efficiency

-> Pressure

-> Volume and duration of running speech.

Table : **1**

	Parameters	Females	Males
I	PEAK FLOW		
	Max.PF (1/s)	3.8079	6.79
	Vol. (1)	.9006333	1.675
	Dur(s)	1.138667	.510
II	VITAL CAPACITY		
	VC(1)	2.27083	3.351
	Dur(s)	1.78	1.61 .
III	MOST COMFORTABLE PHONATION		
	Vol(s)	0.9409667	17.708
	PT(s)	9.604	12.822

Max.rate (1/s)	.0891	0.521
Range (dBSPL)	32.84	22.84
IVVOCAL EFFICIENCY		
Peakflow (1/s)	.03285133	1.093
Vol(1)	.4455367	0.6113
Dur(s)	3.739667	4.122
Phonation rate (1/s)	0.1246	0.4744
Phonation mean SPL (db)	67.69	72.23
Press (Cm H_2O)	1.563333	2.451
Power (Watt)	2.876667E-02	0.1899
Effy. (PPM)	87.0783	76.096
Resi(NS/MS)	34.14633	23.145
V RUNNING SPEECH		
Vol(1)	1.403133	0.9439
Dur(s)	6.107367	5.911

This data could be very useful in establishing norms for males and females age ranging from 17 years - 24 years.

Limitations

- The study included the age range of 17-24 years only.
- Only limited speech sample has been considered.

Implications

1. The method can be used to develop similar norms for different age groups for normal individuals.
2. These parameters can be used clinically and to study these and other parameters in larger population of same and different age groups.
3. The results can be used as data to evaluate voice disorders for purpose of diagnosis.
4. The results can be used to evaluate the progress made by cases during and after therapy.