

example different lung function devices have been used with the more recent studies have employed computerized systems that portend to high precision, but between instrument variability would still exist contribute to variations in measurement⁽¹⁴⁾.

The posture has also been shown to result in slightly lower spirometric values in sitting than standing⁽¹⁵⁾. However, the postural effects are small and probably much less important in determining the measurements than the quality with which the tests were conducted⁽¹⁵⁾.

Similar to many previous studies in which Asians, such as Chinese, Indians, Japanese and Malaysians, have smaller lung volumes than whites^(16, 17, 18, 19), we found that the FEV-1 and FVC values in samples of Iraqi subjects were lower than those of whites for all age groups with the same age and height.

When assessing lung functions values, it is also important to take into account biologic variations^(20, 21, 22, 23, 24). The most important host factors responsible for inter-individual variations in adults were sex ($\pm 30\%$), body size ($\pm 20\%$), and age ($\pm 8\%$)^(25, 26, 27, 28). The age range of subjects in our study was 20 -60 years, whereas ECSC prediction equations apply to men and women of European descended aged 18-70 years.

It has been suggested that ethnic group could be an important source of inter-individual variations in the studied populations: an estimated variability due to this factor is $\pm 10\%$ ^(21, 25).

Limitations

The limitations of this study were the age-range of the subjects and lack of anthropometric measurements. Thus, these results are not applicable to men older than 64 year and women older than

66 years. Considering that ventilatory functions vary with anthropometric variables, the measurements of anthropometric variables of Iraqi population should be introduced into research such as sitting height, weight, hip/waist circumference and ratio, and body mass index.

Conclusions

In conclusion, the reference formulas for males and females in a sample of healthy, non-smoking, Iraqi subjects have been derived. Predicted FEV1 and FVC values derived from the equations based on ECSC, Knudson, Roca and Crapo reference population are higher than the values measured in the present study. For this reason, each laboratory should have its own reference value.

References

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