

The Importance of Lung Function in Predicting Mortality and Disability

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What is Spirometry?

(*spiro*=breathing + *metry*=measurements)

- A ***simple*** and ***safe*** test
- Measures the ***speed & volume*** of air in 1 breath with maximal effort
- An estimation lung function

In the Beginning.....



Sir John Hutchinson, 1846

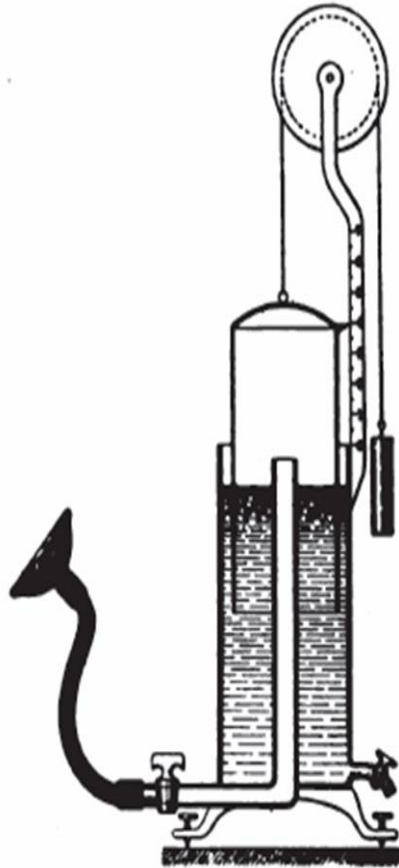


FIG. 191.—A SPIROMETER.—
(Borittau.)

Fig. 11. Hutchinson's spirometer (1852)

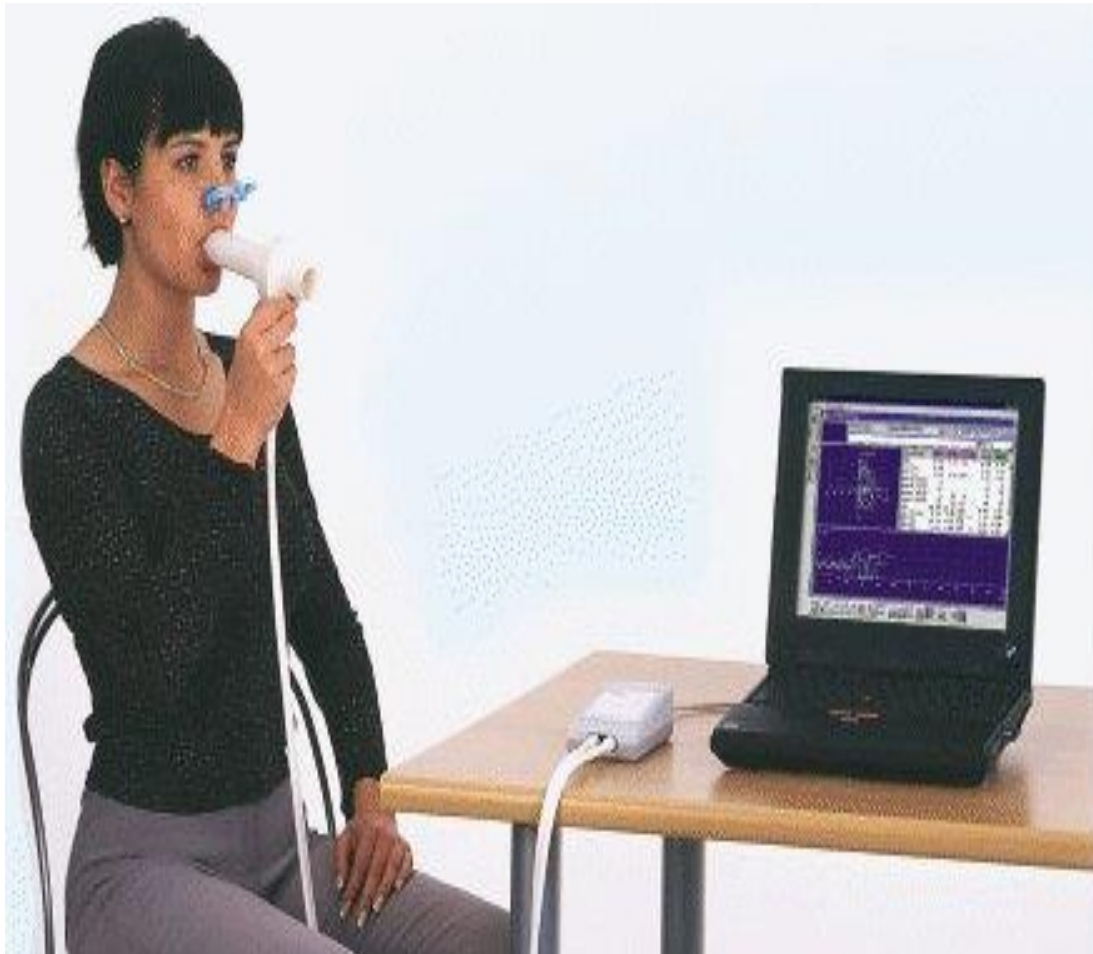
Vital capacity

- More sensitive to detect Tuberculosis than auscultation
- Can predict life expectancy.
Suggested this test for routine life insurance cover.

Spirometers



Portable Spirometers



What do you we measure?

- VC - Vital capacity
maximum volume expired in 1 breath
- FEV₁ - Forced expiratory volume in 1 second
maximum volume expired in the first second (i.e. speed)
- Both measurements allow an estimation on the maximum amount of air (oxygen) during peak lung performance

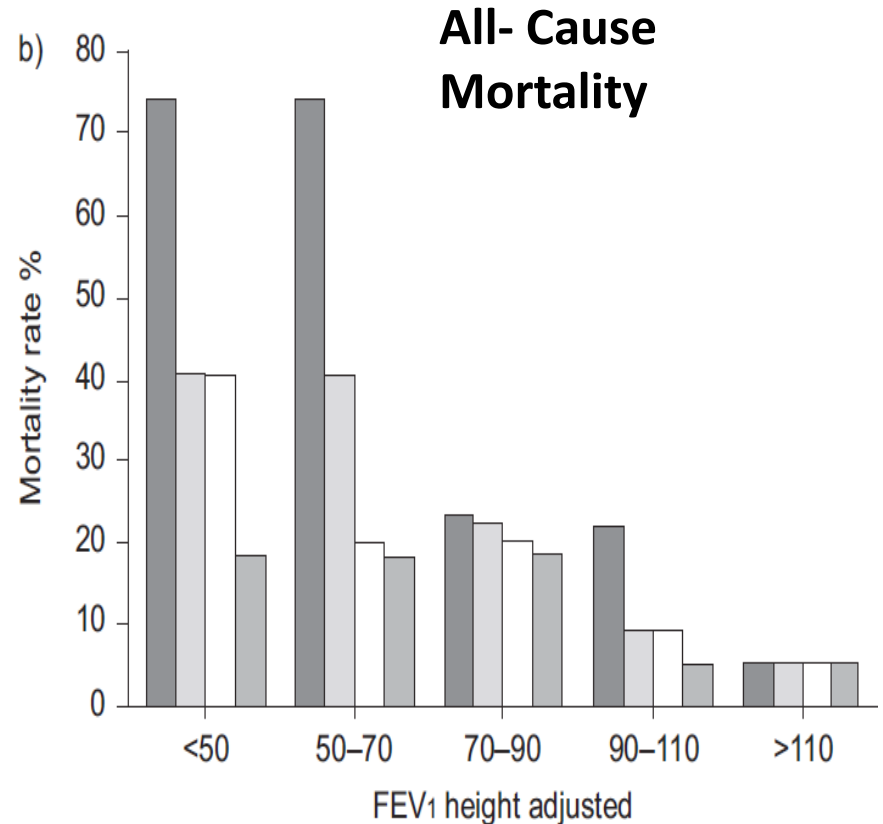
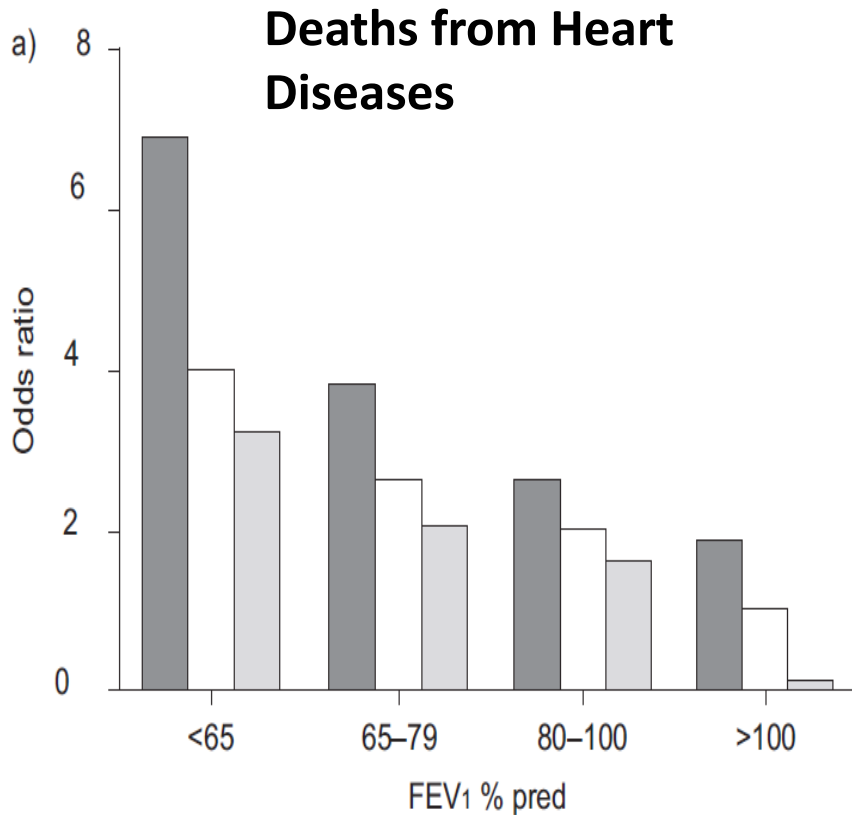
Use of Spirometry:-

****in the presence of symptoms or risk factors****

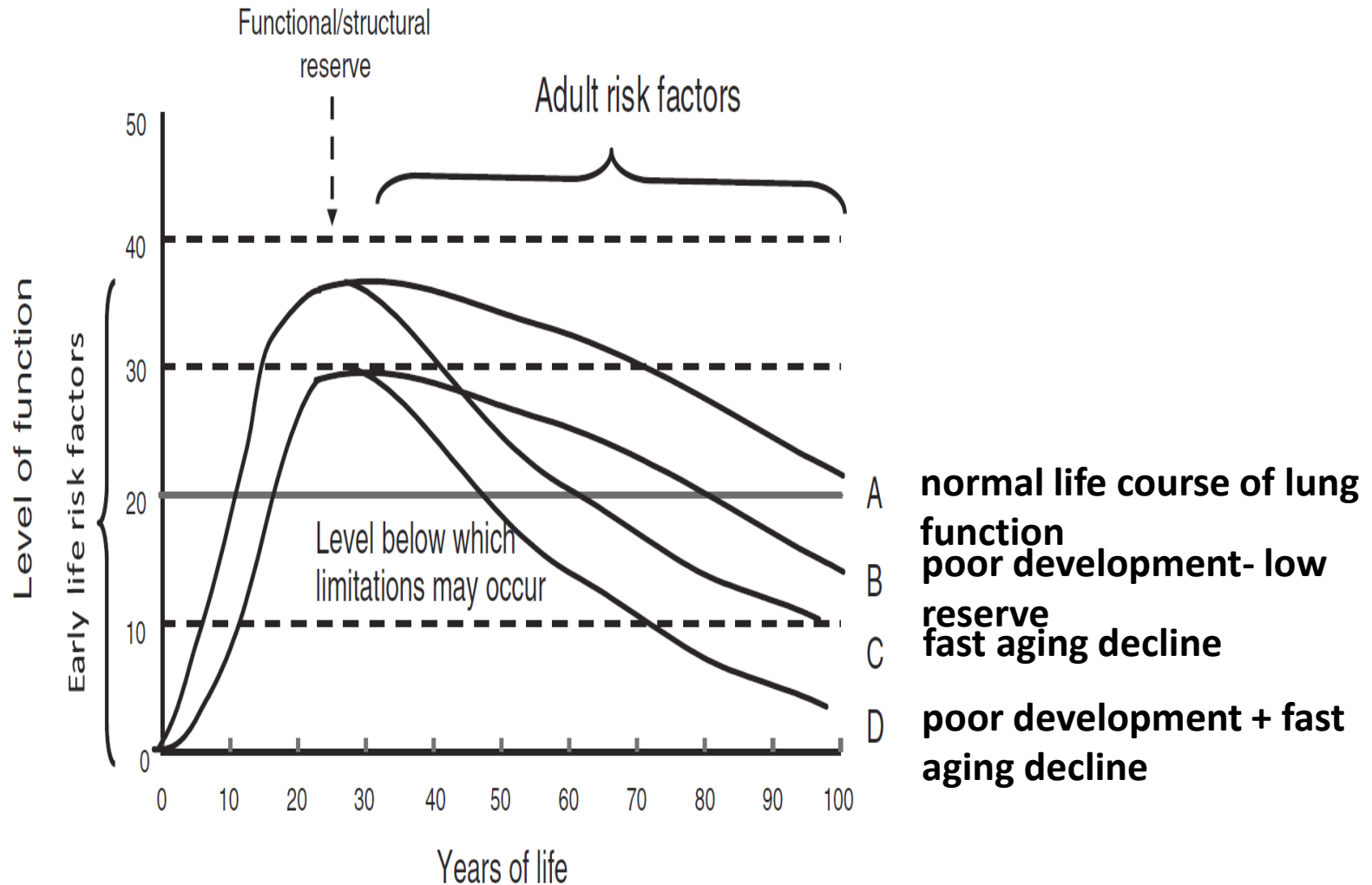
- **Detect** lung damage & loss of lung function
- **Diagnose** accurately which lung conditions (Chronic Obstructive Pulmonary Disease [**COPD**] vs. Asthma)
- **Disability** severity assessment in patients with symptoms
- **Death** allows predict the risk of death

What about in the general population ?

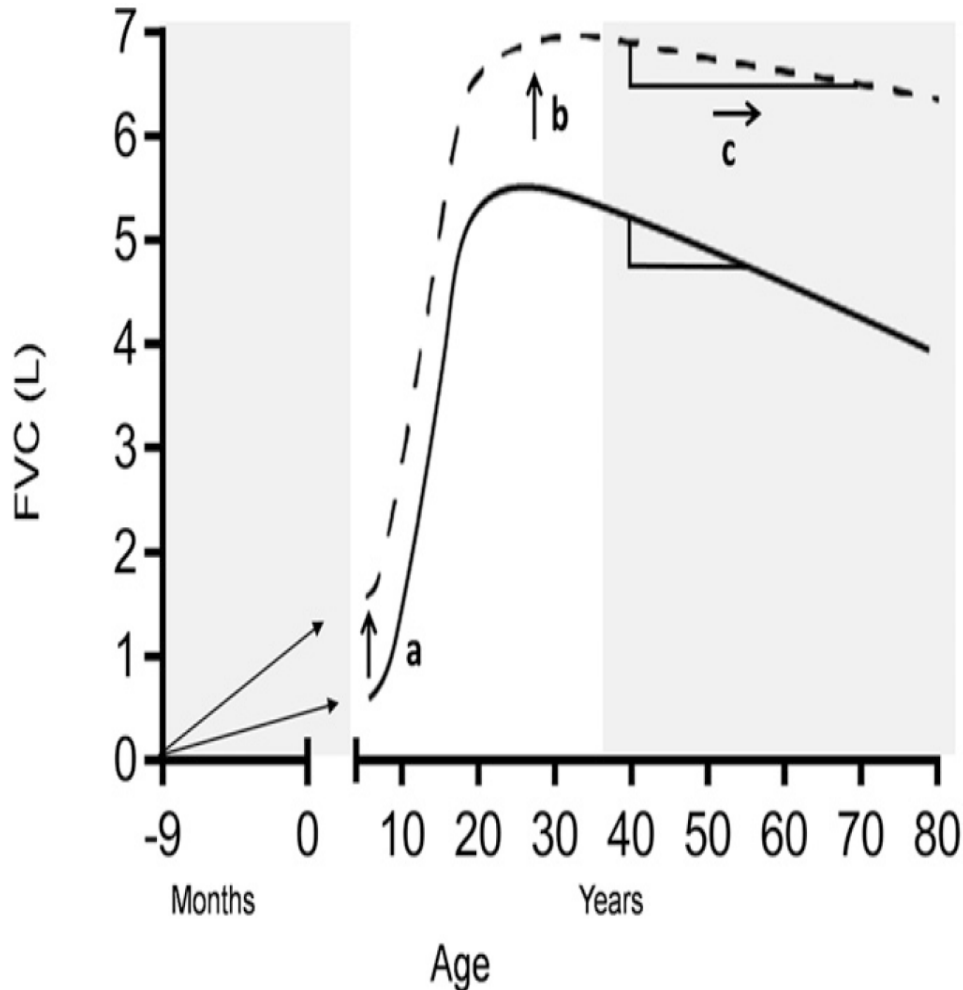
(no symptoms or risk behaviours)



Population: indication of Lung Health



Promotion of Lung Health and Lung Aging



(c) Slow down aging decline

(b) Maximizing peak lung function level- childhood and adolescent factors

(a) Maximizing lung growth- pregnancy factors

Key Message on Spirometry

- A simple and important measure of lung capacity
- Important test for diagnosis of lung diseases
- Important measure of lung health

- ? Factors that will improve lung health and resilience
- ? Factors that will reduce rate of lung function decline with age

BLOW TO KNOW

Thank you for
your attention !