

# Preserve birthday fun with healthy lungs

By Agnes Oblas

Pretend it's your birthday and there's a beautifully decorated birthday cake in front of you with candles lit and glowing.

Friends and family members gather around to root you on to take the deepest breath you can to blow them all out just as fast as you can. This act of blowing out birthday candles actually represents a significant maneuver used to measure lung function.

When a patient takes a deep breath and blows as hard and fast as he can into a machine called a Spirometer, the machine can measure the volume of air exhaled within the first second. It can also measure the total volume of air exhaled; that is up until that point where you think you've blown out every last drop of breath you have and you gasp for that next breath. The first measurement is known as FEV1, or Forced Expiratory Volume in 1 second and the second measurement is FVC, or Forced Vital Capacity.

You might think that measuring the amount of air a person can exhale within one second is getting a bit far-fetched. On the contrary, these measurements

are extremely important if you're a patient suffering from a condition commonly known as COPD, or chronic obstructive pulmonary (lung) disease.

We medical people need to measure lots of body functions and this is just one more. We know how much air a normal healthy pair of lungs can hold and how much these healthy lungs can exhale quickly, as in one second. Knowing that, we can rate, or stage, the degree of impairment for someone with COPD. For example, one patient with an FEV1 of 30 percent of what would be predicted for a normal patient of the same age and height would have a more serious case of COPD than another patient whose FEV1 was 75 percent of predicted.

But I'm getting carried away with this lesson in Spirometry. The take-home message really should be the fact that people with chronic lung disease suffer from obstructed airflow that leaves them in various degrees of breathlessness. Cigarette smok-



## Medical Advice

ing (you knew it was just a matter of time before I got to this point) is the No. 1 culprit responsible for this situation.

Inhaled cigarette smoke (even secondhand smoke to a certain extent) initiates a cascade of inflammatory events that involves macrophages, neutrophils, nuclear factor-B, interleukin-8, tumor necrosis factor-alpha, elastase/antielastase imbalance, proteinase mucus stimulants – need I say more? The net result is a vicious cycle of inflammation in which the bronchial walls thicken, the airways narrow, and blowing out birthday candles just isn't fun anymore.

Fortunately, there are some very good medicines that are delivered directly to the lungs through inhalers. But again, wouldn't it be better to stop the process before it even begins? If you smoke, do whatever you can to stop. It's never too late to stop. If you've never smoked, why start? COPD is the fourth leading cause of death in the United States with related health care costs estimated to be about \$23 billion a year. I know we'll never eradicate death; but maybe we could eradicate COPD as one of the causes.

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