

## SMOKING - A CHILDHOOD DISEASE?

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About 17 % of all deaths in our country are tobacco-related. In 2002, the actual number was 37,209 with tobacco use accounting for \$17 billion in costs to Canadians (Life and Breath: Respiratory Disease in Canada, 2007. Public Health Agency of Canada). Part of the cost can be traced to the 2.2 million acute care hospital days in that year attributed to tobacco. 47,000 of these were due to passive (second hand smoke) exposure. These figures are the tip of an iceberg full of preventable pain and suffering.

People usually don't start smoking later on in life. In fact, I think my friend was right in describing this habit as a childhood disease. Peer pressure to begin smoking begins around grade five and takes its greatest hold in young adults who are 20 to 24 years of age. The bottom line is: one in five Canadians smoke.

What might be a gripping lesson to help convince children to be smoke free? What better way than to simply look at smokers' lungs? With the help of real tissue samples from the Hardwick Pathology Learning Centre at VGH, and the animated discussion provided by Dr. Smecher, that's exactly what we did last week in two grade 5 classes at the Alberni Elementary School.

The first specimen we studied was a healthy lung. It was easy to see the clean, fine tissues full of white bronchioles that keep branching into smaller and smaller networks.

Next we looked at the jet black lung of a 59 year old man who had been smoking 40 cigarettes a day by the time he died of emphysema. The most notable aspect of this lung, other than the remarkable carbon load, is how much of it is missing. Smoke eventually hardens and kills off lung tissue leaving behind a gossamer ghost of what once was. Eventually, even the gossamer structure can rot away leaving large holes called bullae.... and a smoker who approaches death with increasingly labored breathing.

The next sample was donated by a 55-year-old male cigarette-smoker who died of lung cancer. His lung was jet black too, but there was only a thin perimeter of it left, wrapped around a robust cancer mass that had completely taken over. We learned that cigarette smoking is the main cause of lung cancer, accounting for at least 80% of all new cases of lung cancer in women and 90% in men. Lung cancer is the leading cause of death due to smoking.

As with other smoke, cigarette smoke also gives rise to heart disease. The last sample we studied was a heart section that showed an area of shriveled dead tissue from a previous attack, and a bruised-looking area from the 'myocardial infarction' that caused the death of this donor.

The students discussed many aspects of smoking, including the nature of habit and how hard it is to quit. Although we can empathize with the grip of addiction, there is no excuse for exposing others to second-hand smoke. Even so, in 2006, 15% of Canadian households reported at least one person who smoked inside the home everyday, or almost everyday. Surprisingly, 10% of women between 22 and 44 years old, who had been pregnant in the previous five years, reported smoking through most of the pregnancy. In utero exposure is associated with lower birth weight, reduced lung function in infants, and Sudden Infant Death Syndrome.

The students could see that kids often start smoking because they think it's "cool". But they could also see, as Dr. Smecher said, that there is nothing cool about the end result. Hopefully, those black images will help steer their course in a smoke-free direction.

It was a pretty heavy class, but we ended with this positive note:

## WHAT HAPPENS WHEN A SMOKER QUILTS SMOKING?

The improvements in health are dramatic and immediate.

- Oxygen levels in the blood increase to normal within hours.
- Carbon Monoxide levels drop within hours.
- Lung capacity increases within days.
- Circulation increases within weeks.
- Risk of stroke and other circulatory diseases diminish.
- Chance of smoke-related heart attack is cut in half within a year.
- Chance of getting cancer is cut in half within a few years.  
(compared to those who continue to smoke).
- Within 15 years the risk of fatal heart attack is the same as someone who never smoked.