



PROBUS Club of Central Edmonton Newsletter

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June 7 Tour of Edmonton Symphony



The purpose of the Winspear Centre for Music, its themes and history were illustrated by what we saw around us in the lobby. It was constructed from Tyndall stone to blend with other buildings in Sir Winston Churchill Square. The stone, rich in fossils and texture, is only found in Manitoba. Many parts of the building incorporate the five horizontal lines of the musical staff (or stave). The Winspear was designed by Cohos Dialog.



The Winspear was funded from the initial donation of \$6 million from businessman Francis Winspear, whose bust appears in the lobby. The construction cost of the current building was \$45m, with the site of a former police station being donated by the City of Edmonton. The concert hall is insulated from adjacent sources of noise and vibration, with subway trains running more slowly through Churchill Station. This main hall seats 1800 people with world-class acoustics. It is the home of the Edmonton Symphony Orchestra (ESO).

The focal Centre of the main hall accommodates the Stuart and Winona Davis Concert Organ funded by his \$2 million donation. With 6500 pipes, it is the largest in Canada, imitating all concert instruments.



The Winspear's organist explained how the organ operated and, after he played a piece to demonstrate its versatility, we turned in the opposite direction to watch and listen to a rehearsal by ESO. It was interesting to see how the conductor described the changes required of the musicians; and then to hear the difference when the same music was replayed after the

conductor's change.

The 'back-of-house' facilities of the Winspear Centre are now being modified to reflect the current needs of musicians, the public and support staff. For use by the community, there will be 'music discovery zones', rehearsal spaces, musical instruments for loan and a catering kitchen. The new design provides for daily after-school music education, as well as facilities for the Youth Orchestra of Northern Alberta.

With 'bridges' from the existing building, a new building is under construction on the east side. Facilities include a new event hall seating 600 people with curved, retractable seating, replacing the

earlier rehearsal hall. There will also be underground parking. A district heating facility has also been built to support the Winspear and adjacent City of Edmonton buildings. Bob Kamp (our program co-chair), Alex Draper (the Winspear's director of philanthropy) and Wylie Stafford (the Winspear's project manager for renovations and extension) are to be thanked for a very interesting, and well-organized tour.

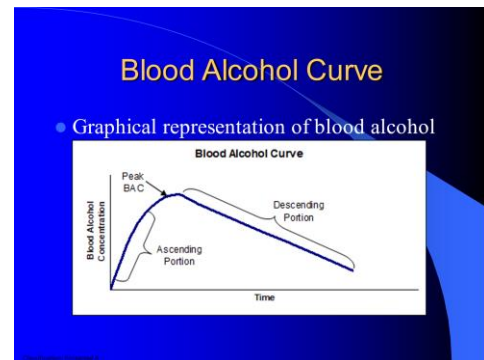
June20 - Kerry Blake

Kerry Blake, Coordinator of the Provincial Breath Testing Program (Alberta Justice and Solicitor General), spoke on "Physiology and Pharmacology of Alcohol, and Breath Testing Technology".

Topics cover in the presentation focused on the what the body does with alcohol and its effect on us, topics were:

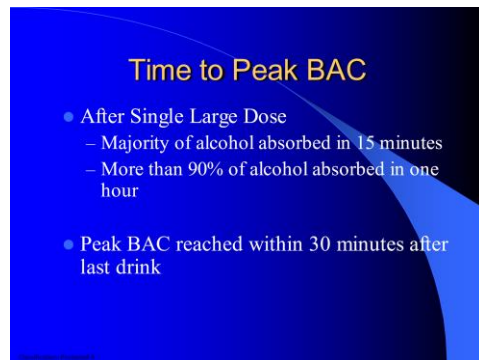
- Absorption
- Distribution
- Elimination
- Correlation of BAC with Other Body Fluids

She then spoke about the machines used to test BAC. She started by explaining the Blood Alcohol curve (BAC), as shown on this slide. The slide shows the rate of absorption and elimination. She noted that the curves will vary depending on several factors, but it always follows these three phases.



The first phase, the absorption phase occurs because a person is absorbing alcohol faster than the body can eliminate it. The peak, referred to as Distribution, is when your stop consuming alcohol or rate of consumption is the same as the rate of elimination, in this case your peak may look like a plateau. The next phase is elimination phase. As you can see it is a straight line. To quote her:

"...I've stopped shy of the baseline. The reason for that is the kinetics of elimination change when we get to quite low blood alcohol concentrations. I'd like to refer to this declining phase like a hockey stick. If you can envision it as such for the bulk of your elimination phase you were in the shaft of the hockey stick. But when we get to about 20 milligrams per cent, it goes into the blade of the hockey stick, and it flattens out a little bit. It takes a little bit longer to get to zero. It's almost like the human body wants to hold on to that last drink just a little bit longer and it does that."

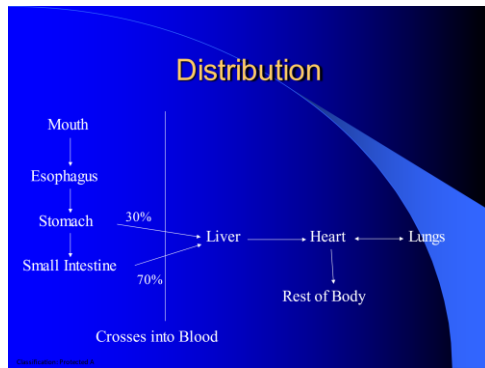


With respect to absorption, we learned that alcohol is a very small molecule, and can be absorbed directly through membranes – no need to break it down. It is absorbed through the stomach (30%) and intestine (70%). Due to the differing nature of these membrane (stomach smooth, intestine multiple folds) most of the alcohol is absorbed through the intestine, taking advantage of the much greater surface area.

A key factor that affects absorption is food. With food in your stomach the curve is less steep, and perhaps a lower peak.

Carbohydrates and proteins are most effective in affecting

absorption. She noted that the smart thing is to go through McDonalds drive-through prior to drinking and not after. Along with food, concentration of alcohol in a drink has a big impact on absorption rate, with peak rate occurring with alcohol concentration of between 30% and 40%.



This slide shows how alcohol, is distributed throughout body. The first place it goes is the liver, which does the elimination. The Blood also carries it to the heart lungs and brain.

The Body eliminates alcohol in two ways, first metabolism:

- Occurs mainly in liver
- Alcohol changed to CO₂ and water
- 90 - 98% of alcohol consumed

The second way is elimination. Removed from the body unchanged through breath, urine, sweat, tears, saliva, and feces. This represents 2% to 10% of alcohol consumed.

One final point, the rate of elimination is independent of weight, height, or gender. For most people the rate of elimination is 10 to 20 mg per hour. This is the rate that the liver enzymes break down alcohol. Thus, if you party to 2 am and get up at 7 am, it's still illegal to drive.

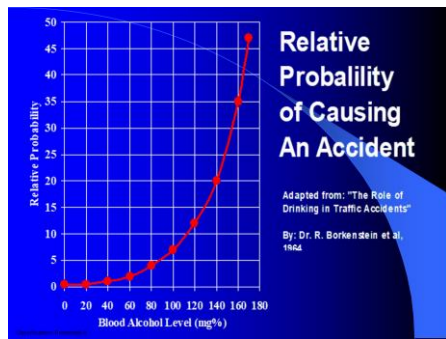
Alcohol has an affinity for water and migrates to it. So, both tissues and fluid attract alcohol. She told us that since men have more water in their body than women, all things being equal women will have a higher BAC than a man after consuming the same amount of alcohol.

The tests run by law enforcement determine the BAC of a person. Studies have confirmed that that there is a hard ratio between alcohol content in breath and BAC.

So, what happens to the body? Alcohol is classified as a Central Nervous System Depressant. Effects of alcohol are progressive – more severe as the BAC gets higher. Symptoms grouped into four general ranges:

- Impairment – BAC less than 100 mg%
 - Loss of inhibitions and emotions
 - Effect on driving skills
 - visual abilities
 - judgment
 - reaction time
 - concentration/attention
 - information processing
- Intoxication - BAC 100 - 250 mg%
 - disturbed vision
 - loss of balance
 - vasodilatation
 - muscular incoordination
 - slurred speech
 - emotional disturbance
 - decreased pain sense
- Severe Intoxication – BAC 250 - 400 mg%
 - depressed reflexes
 - apathy
 - stupor
 - comatose

Finally, a BAC of 400 mg or greater leads to death.



This slide shows the relationship of BAC to the probability of causing an accident. Alcohol causes:

- tunnel vision
- issues with depth perception
- slower refocus on road after being exposed to head lights.

- impaired judgement, thus decisions are slow
- etc.

Yes, drinking and driving is bad.

She noted that heavy drinkers, are not more tolerant to alcohol, they have just developed strategies to disguise its effect.

She reviewed the types of approved testing machines, including the one police use at the side of the road to the ones used at a station for legal purposes. As to testing phases, these are:

- Collection
 - Introduction of sample into the device
- Analysis
 - chemical reaction of alcohol in a fuel cell
- Measurement
 - determining the quantity of alcohol present by means of an alpha-numeric display.

Ultimately BAC is converted to a number. Based on this number a course of action is displayed. She also spoke about how the machine deals with Mouth Alcohol i.e., wait 15 minutes and take the test again if mouth alcohol is detected.

I have touch on some of points she made during the presentation, there was a lot more said. She was a remarkable presenter who spoke without notes in a clear and eloquent manner. After the presentation, I chose not to have a drink with lunch.

June 30 - Blatchford Power Station

We attended the Blatchford power station. We started with a presentation that explained the basis for the Blatchford development and the district energy sharing system.

Blatchford community is being developed in the old city airport land. 536 acres have been set aside for the development of the district. This quote from the website describes the vision:

“...with residents living, working, and learning in a sustainable community that uses 100% renewable energy, is carbon neutral, significantly reduces its ecological footprint, and empowers residents to pursue a range of sustainable lifestyle choices.”

As it stands now, the land has single family homes and a few parks. We did experience the sights and sound of continued development. There are about 50 homes currently on site. The first family moved in in 2020. The following pictures present the current state of development:



The following image (Taken from the Encore Homes website) is indicative of the final visions. Next is evidence of the continued work to move from the rough land to the final image.



The site developed to date includes roads, some parks, wide walkable side walks and built in bike lanes. It also contains the pipes for the district energy system and one station.

A home in the Blatchford neighborhood will be able to be connected to electricity, and natural gas like any home in Edmonton. What is unique, is the connection to the district system for heat and cooling. No home will have a hot water heater, AC or furnace. All heating and cooling needs are met by the district system. These services are provided by Blatchford Renewable energy. The following quote from its website describes the company:

“Blatchford Renewable Energy is a new City of Edmonton company that is providing sustainable utility services to the Blatchford community. Through innovative design, the utility leverages on-site renewable resources around us to heat your home, keep you cool in the summer, and make sure your hot water is at the ready. We can mobilize heat from the earth, our waste, even the sun to eliminate one source of climate change. This is why the Blatchford Renewable Energy was created. So right here, right now, in the heart of a major Canadian city we’re changing the game.

Not just because we can, but because it’s the right thing to do.”

As noted in the vision for Blatchford, the goal is to reduce greenhouse gas emissions. The core of the system is the geoexchange field, which consists of 570 boreholes that are roughly 150 metres deep. Fluids are pumped down the pipes placed in the holes and resulting in a temperature exchange. The fluid are then transported through the connecting pipes to the energy station. In the station it has its temperature raised by efficient energy pumps, then sent to buildings through underground pipes.

The following pictures are of the station and its equipment:



Heat pumps



Part of the complex plumbing



This is the first of 4 stations to be built for the development. Also, it should be noted that it had room inside for explanation.

The Company is part of the city administration and reports through to the Council. It has been mandated to have competitive pricing for its energy, yes, each house receives a bill each month. It determines the price by monitoring the energy rates throughout the city.

It was an interesting tour that let us in on a possible future for city development. While Blatchford has received awards, it is evident that much more development is needed to realize the vision. We thank are host for his informative presentation. I suggest to readers that they check these websites for more information:

- [Home - Blatchford \(blatchfordedmonton.ca\)](http://blatchfordedmonton.ca)
- [Blatchford Renewable Energy Utility | City of Edmonton \(blatchfordutility.ca\)](http://blatchfordutility.ca)

As a side note, these are the last events offered under Mel and Bob leadership. They are typical of the variety of very interesting and informative events we experienced. I thank both for the great work and dedication to PROBUS.

Thanks for a great year.... Ken