Occupational cancers in firefighting

CTIF INTERNATIONAL ASSOCIATION OF FIRE AND RESCUE SERVICES. November 9th and 10th 2018

Tommy Kjaer

- Public Firefighter 27 years. Special trained. Now retired from active service.
- Education as fire officer and instructor from State Fire service.
- Professional rescue diver.
- Certified in “Reconstruction and Integration of Traumatic Stress”.
- Editor of firefighter magazine for 11 years.
- Union leader for 7 years.
- Author of numerus articles about occupational health and safety for fire fighters.
- Speaker to fire fighter organizations, Universities and Parliament members around the world about occupational health and safety for fire fighters.
- Member of deferent boards regarding firefighters safety and health.
- Founder of “Danish Firefighter’s Cancer Organization” BFC
- Member of honor upon “The Nordic Firefighters” NBS
- Winner of “The Danish Community Awards 2015”
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Presentation by BFC President Tommy Bækgaard Kjær, Denmark

➢ “Here and now” dangers

➢ “Long term” dangers. What and why?

➢ Prevention

➢ Legislation
“Here and now” dangers

- Building collapse
- Explosions
- Burn- and heat stress
- CO damage on heart and brain
- Too few firefighters on the scene
How do we handle this?

- The best safety equipment and Personal Protective Gear.
- Knowledge through education
- Sharing knowledge and experience
- Proper training
- No cut downs on staff... Add resources
“Long term” dangers. What and why?

- CO damage
- Psychological damage
- Physical strain of the body
- Occupational cancers
Occupational cancers in firefighting

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CO damage

- 22.000.000 people world wide
- 75-80% firefighters
- Wrong diagnoses
- Looks like stroke and/or embolism
- From all fires and off gassing

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CO damage – spot it

- Headache from ear to ear and neck
- Gray color. Pail
- Disoriented
- Lose consciousness
CO damage – no action

- Like stroke
- Loss of memory
- Speech difficulties
- Alzheimer
- Symptoms occur within 48 hours
- No treatment = too late
What to do?

- ALWAYS oxygen therapy in pressure tank
- Within four hours
Psychological damage

- PTSD.: 17 - 30% firefighters show symptoms
- Anxiety disorder: 20 – 23% in ambulance personal
- Clinical depression: 8 – 21% in both groups
Psychological damage – Why?

- Nature of the job
- Culture and changes within the organization
- Lack of recognition and backup from the leadership within the organization
Psychological damage – prevention

- Change of attitude in the organization (Not on the scene)

- Make systems to psychologic defusing and debrifing

- Make it ok to talk about how you feel

- We are all the same. Brothers and sisters
Physical strain of the body

<table>
<thead>
<tr>
<th>Basic turn out gear for all firefighters</th>
<th>13.2 Kilo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firefighter seat number 1</td>
<td>41.9 Kilo</td>
</tr>
<tr>
<td>Firefighter number 1 all together</td>
<td>55.1 Kilo</td>
</tr>
<tr>
<td>Firefighter seat number 2</td>
<td>50.4 Kilo</td>
</tr>
<tr>
<td>Firefighter seat number 4 all together</td>
<td>63.6 Kilo</td>
</tr>
<tr>
<td>Firefighter seat number 3</td>
<td>56.8 Kilo</td>
</tr>
<tr>
<td>Firefighter seat number 3 all together</td>
<td>70.0 Kilo</td>
</tr>
<tr>
<td>Firefighter seat number 4</td>
<td>64.3 Kilo</td>
</tr>
<tr>
<td>Firefighter seat number 4 all together</td>
<td>77.5 Kilo</td>
</tr>
</tbody>
</table>
Occupational cancers

Cancers kills more firefighters than actually “death in the line of duty”
Occupational cancers

IARC group 1 carcinogens from all fires

- Benzene
- PAH’s -Polycyclic Aromatic Hydro Carbons
- Diesel Particulates
- Formaldehyde
- Dioxin
- Soot
- (Asbestos)
- Chemical cocktail 1+1=5

Group 1:
Known cancer causing for humans.

Group 2A:
Probably cancer causing for humans.

Group 2B:
Possibly cancer causing for humans.
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Occupational cancers - Uptake

- Breathing through the lungs
- Eating through the digestive system
- Dermal uptake through the skin
  Warm skin absorbs more toxins
Occupational cancers

Expositor studies:
Show big elevations of soot on the skin and markers in urine and blood and DNA damage in blood cells.

Epidemiological studies:
Study after study show increased cancer rates in firefighters compared to the general population. It should be less. HWE

http://www.brandcancer.dk/litteratur/
Occupational cancers in firefighting

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Danish firefighters

Expositor studie:
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http://www.brandcancer.dk/litteratur/
Occupational cancers – Prevention
Always use best PPE
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**Occupational cancers – Prevention**

Make procedures on the scene. “Safe zone”
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Occupational cancers – Prevention
Make procedures on the scene
Occupational cancers – Prevention

Clean – not clean firehouse
Occupational cancers in firefighting

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Occupational cancers – Prevention
Proper washing and decontamination

No go

Proper textile decontamination using LCO2

Proper ozone decontamination of radios and other “hard” equipment.
Occupational cancers – Prevention
Personal washing after every fire

Shower ➔ Sauna ➔ Shower ➔ Wash
Occupational cancers – Legislation

The first reported occupational cancer by Percivall Pott in 1775 linking soot to cancer lead to the first preventive legislation passed by British Parliament in 1778.

The chimney sweepers act stated:
Chimney sweepers has to be at least eight years. They must be provided with clean clothes. They must go to church on Sundays.

Fire fighters are the modern days chimney sweepers.
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Occupational cancers – Legislation

<table>
<thead>
<tr>
<th>PRIMARY SITE CANCERS</th>
<th>MINIMUM PERIOD OF REGULAR EXPOSURE TO THE HAZARDS OF A FIRE SCENE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary leukemia</td>
<td>5 years</td>
</tr>
<tr>
<td>Primary site brain cancer</td>
<td>10 years</td>
</tr>
<tr>
<td>Primary site bladder cancer</td>
<td>15 years</td>
</tr>
<tr>
<td>Primary site lung cancer in non-smokers</td>
<td>15 years</td>
</tr>
<tr>
<td>Primary site ureter cancer</td>
<td>15 years</td>
</tr>
<tr>
<td>Primary site kidney cancer</td>
<td>20 years</td>
</tr>
<tr>
<td>Primary site colorectal cancer</td>
<td>20 years</td>
</tr>
<tr>
<td>Primary site testicular cancer</td>
<td>20 years</td>
</tr>
<tr>
<td>Primary site esophageal cancer</td>
<td>25 years</td>
</tr>
<tr>
<td>A primary non-Hodgkin’s lymphoma</td>
<td>20 years</td>
</tr>
<tr>
<td>A primary site prostate cancer</td>
<td>15 years</td>
</tr>
<tr>
<td>A primary site skin cancer</td>
<td>15 years</td>
</tr>
<tr>
<td>A primary site breast cancer</td>
<td>10 years</td>
</tr>
<tr>
<td>Multiple myeloma</td>
<td>15 years</td>
</tr>
</tbody>
</table>

AR 102/2003 s2;249/2005;74/2010;73/2011

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Heroes

Firefighters risk their life and health for every day and NEVER turn their back on society.
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Another hero –

Also risk his life to help others...
Another hero –

Clean gentleman...

Properly lives longer...

Gets all the ......

which hero do you want to be?
We ask the politicians to do the right thing and accept occupational cancers in firefighting.

Firefighters start the job being healthy.

They should end the job being healthy.
Thank you

Questions?