



INDOOR POLLUTION
IN OUR SCHOOLS AND GOVERNMENT OFFICES
AFFECTS LEARNING AND
SHORTENS LIVES
LEGALLY DEFENDED 2013

THIS IS A STORY ABOUT INDOOR POLLUTION – AND WHY...

SITTING IN A BAD OFFICE
FOR 10 YEARS



IS THE
SAME AS

SMOKING A PACK A DAY
FOR 29 YEARS*



This is a story about Canada's biggest secret – Ozone!

“**Ozone** is not only killing people, it's causing tens of millions of people to get sick each day”.

*New York Times – Coral Davenport
“Obama to introduce sweeping controls
aimed at ozone” – Nov. 25/2014*

* Ozone is “The only pollutant associated with an additional decline in lung function...”

CNN Health Aug. 14/2019

“Resistance lowered indoors results in higher reaction rates outdoors.” **I.e. Asthma attacks!**
Canadian Centre for Health & Safety

THIS IS A STORY ABOUT COPIERS AND OZONE...

I.e. Old Technology Copiers that release O₃*... Ozone



I.e. Ozone

That eats away at our lung capacity

I.e. Ozone

That converts paper dust (wood) into airborne carcinogens



The key point to note!

1 in 4 of us will die of cancer! #1 Lung Cancer
#2 Breast Cancer

THIS IS A STORY ABOUT CHEATS

Cheats like VW
who misled us about
their emissions



Cheats like Xerox Corp.
who misled us by;

Stating that “it (ozone) rapidly reverts back to oxygen”

- **FALSE**

Implying that “the half life of ozone is 5 minutes or less”

- **FALSE**

Implying that we can smell it at low concentrations

- **FALSE**

Implying that its remanufactured products are “new models”

- **FALSE**

I.e. Cheats who paid
\$33 Billion

In fines

The true “half life” of ozone is 3 days at 20°C

“People who were exposed to just 3 PPB more ozone over 10 years (e.g. – at work) face the same risk of emphysema as a person who smokes a pack a day for 29 years.”

I.e. Cheats who paid lobbyists
to make over 100 calls federally
during the last tender



Environmental Justice

Yessenia Funes – Aug. 14/2019 – 12:55PM

THIS IS A STORY ABOUT

“Huge political forces that are at play to distort and downplay the truth about air pollution”

EPA ozone designations raise concerns of political influence
Gavin Bade – May 1/2018

Yes, we have **4** problems

CARS



Britain to ban diesel cars by 2040.

COAL PLANTS



Obama closed them.
Trump is opening them.
Environmentalists are fighting.

COPIERS



Most vendors fixed the problem
but one, i.e. Xerox kept
marketing old technology.

And Lobbyists – like the Xerox ones who made 100 calls pre & mid tender



Including on March 16/2016 one to...

Justin Trudeau, Prime Minister of Canada / Prime Minister's Office (PMO)

**Xerox of Canada Lobbyists made almost 100 visits
in the middle of a major federal tender**

AND IT IS A STORY ABOUT LIES

Xerox says:

“For typical offices, the “half-life” of ozone is 5 minutes or less.”

Xerox’s – “Facts About Ozone” Document



SORRY!

Ozone did not travel from the Fort McMurray fire to “kill people”* in Connecticut in minutes

**Paul Makar
Sr. Scientist – Environment Canada*

*Ft. McMurray fires cause air pollution spike on other side of continent
-CBC News Margo McDiarmid – Sept. 26/2017*

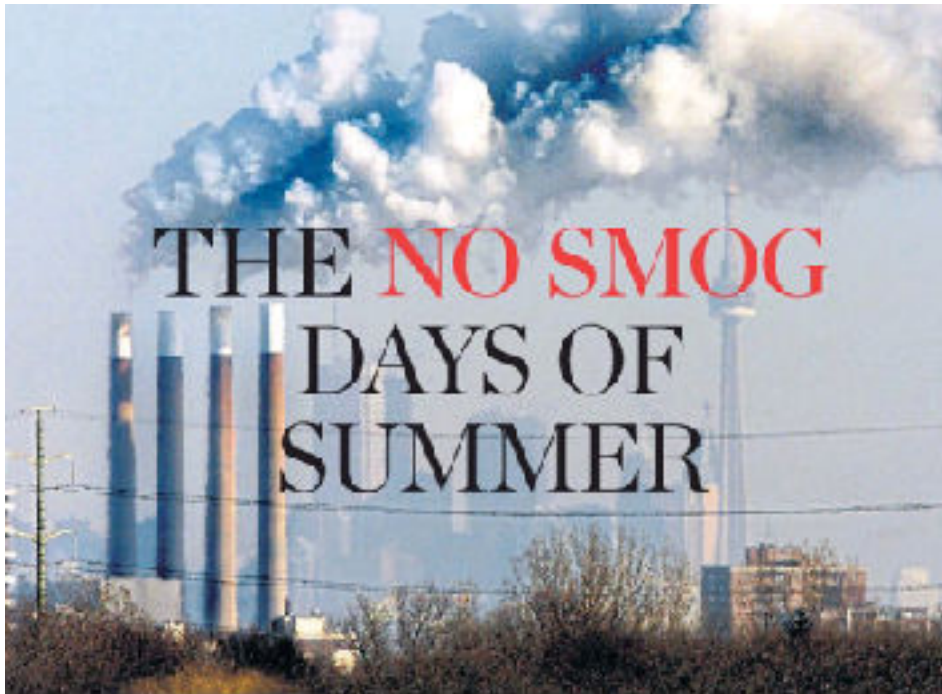
THERE WILL BE A DAY OF RECKONING

Ask Bayer (Monsanto) and Johnson & Johnson

AND ABOUT MISCONCEPTIONS

TORONTO STAR

TUESDAY SEPTEMBER 10, 2019



The Lakeshore Generating Station, shown here, was demolished in 2007; the last coal-fired power plant in Ontario to close was Thunder Bay's in 2016. But an expert says after the plants closed, people stopped talking about air pollution.

The summer of 2005 saw 48 smog days. But since 2014, Toronto has only had one. What's going on? And will it last?

“Ontario hasn’t seen a resurgence in smog, but **ozone** concentrations have stayed stubbornly unchanged.

-September 10, 2019



This important message was buried on page 8...

“Pollution” and “Smog” are code words for what really kills us – Sorry folks – it’s Ozone!

THE FACTS!

Three elements make up air pollution

Only one of which will kill you!

1. Ground Level Ozone (O₃)
2. Fine Particulate (PM_{2.5})
3. Nitrogen Dioxide (NO₂)



Add sun
and they call it
“SMOG”

Ontario's Air Quality Health Index (AQHI) updated
June 24/2015 by **Dr. Eric Hoskins**, Minister of Health



He tried

We Repeat

**“Ozone is not only killing people, it's causing
tens of millions of people to get sick each day.”**

New York Times — Coral Davenport Nov. 25/2014
“Obama to introduce sweeping new controls aimed at ozone”

Sorry folks – Republicans in congress shut him down.

OK - WHY IS O₃ A PROBLEM BY ITSELF?



Environmental Topics

Laws & Regulations

About EPA

CONTACT

Ground-level Ozone Pollution



Ozone kills lung cells

Which

Emit enzymes as they die

Which

Trigger histamine production

Which

Raises blood pressure

RESULTING IN: EMPHYSEMA

And

UP TO

3 DAYS!

LATER

**ASTHMA &
HEART ATTACKS**

**After years of
very small
exposures**

**Up to 3 days after
a bigger exposure**

SO WHY BE CONCERNED WITH CARS AND COAL PLANTS?

Cars and Coal Plants create NO_2



O_3 then attacks $\text{PM}_{2.5}$ (car exhaust) creating carcinogens!

VW paid
\$33 Billion!
penalties

**V.W. has paid out \$33B for lying
about their emissions**

SO WHY BE CONCERNED WITH COPIERS I.E. OLD TECHNOLOGY COPIERS

O₃ attacks paper dust (wood) which creates **carcinogens...**
which cause lung cancers.



Ozone's Impact on Public Health:
Contributions from indoor exposures to
ozone and products of ozone – initiated chemistry.
-Charles S. Weschler

**1 in 4
Canadians
will die of cancer**
Lung and Breast are #1 & #2

NOTE



**Paper dust (wood) tops the list of elements that can
be converted to airborne carcinogens if O₃ is present.**

-Weschler

Environmental Health perspectives 2006 Oct; 114 (10): 1489-1996
Ozone's impact on public health; contributions from indoor exposure and
product of ozone – initiated chemistry

BUT... ONTARIO'S DEPARTMENT OF LABOUR SAYS WE'RE SAFE AT 200µg/m³

0.1PPM = **100PPB** = 200µg/m³

SORRY!

The World Health notes “ <u>significant increases</u> in mortality” at...	50µg/m ³
The American Lung Assoc. <u>sued the EPA citing</u> increased mortality at...	30µg/m ³
David Suzuki says – “ <u>There is no safe level</u> ” ...	0µg/m ³



“People who were exposed to just **3 parts per billion (i.e. 6µg/m³) more ozone** over 10 years face the same risk for emphysema as a person who smokes a pack of cigarettes a day for 29 years.”

Environmental Justice
-Yessenia Funes **Wed. Aug. 14/2019**
“ Even low levels of air pollution can damage...”

AND WHY ARE WE MORE AT RISK INDOORS?
If we sit near a high volume old technology copier



Answer
It's not concentration
It's concentration X duration

Haber's Law

When we spend 90% of our time indoors - **even small amounts of ozone will steal lung capacity.**

SITTING IN A BAD OFFICE
FOR 10 YEARS

SMOKING A PACK A DAY
FOR 29 YEARS*

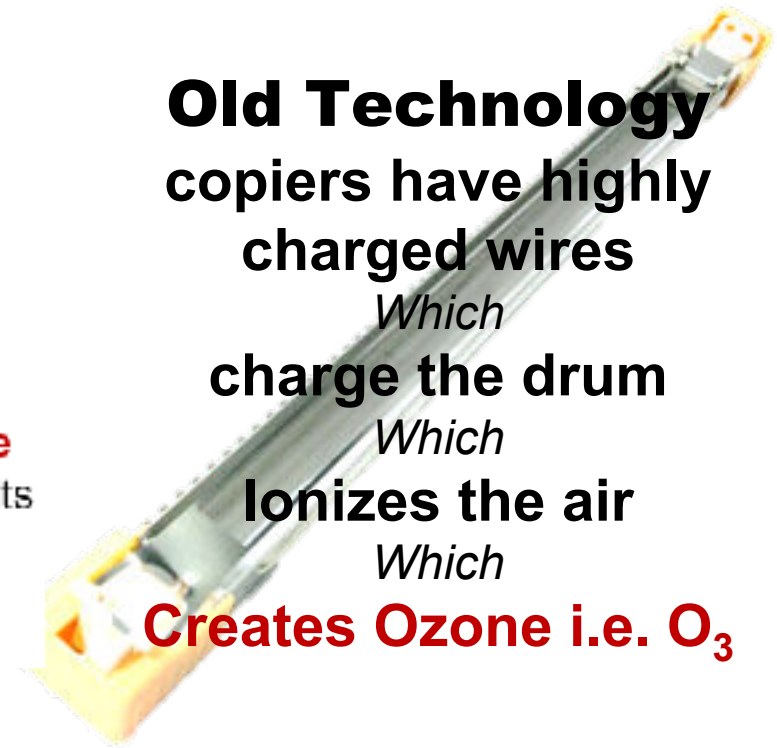
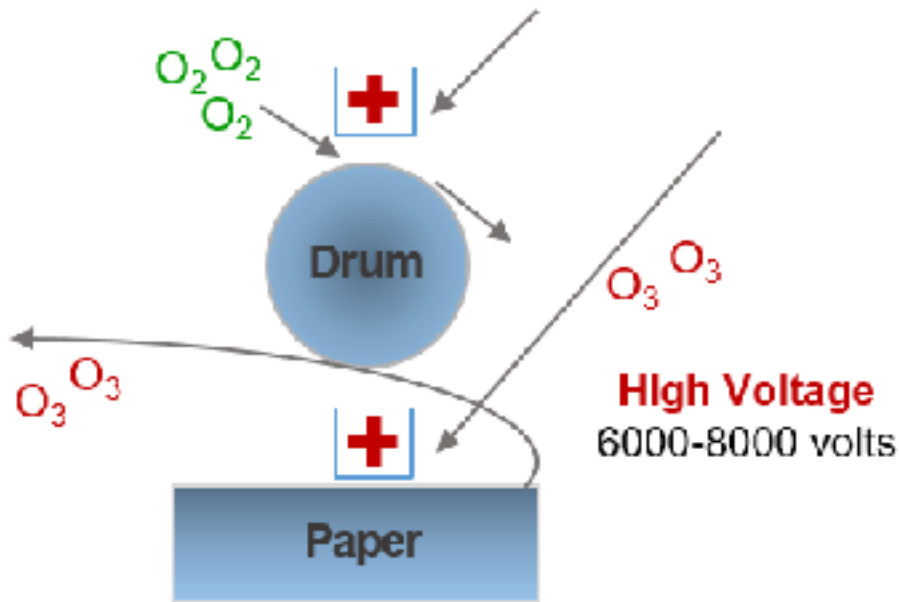


IS THE
SAME AS



I.e. Just
3 parts/billion
i.e. $6\mu\text{g}/\text{m}^3$
more ozone
will shorten your life

AND WHY ARE OLD TECHNOLOGY COPIERS A REAL PROBLEM?



Old Technology
copiers have highly
charged wires
Which
charge the drum
Which
ionizes the air
Which
Creates Ozone i.e. O₃

And

As the EPA tried to warn us (before lobbyists silenced them)

**OLD TECHNOLOGY
COPIERS RELEASE**

**16 – 33
TIMES MORE O₃**

**THAN OUR INDUSTRY
WANTS YOU TO BELIEVE**

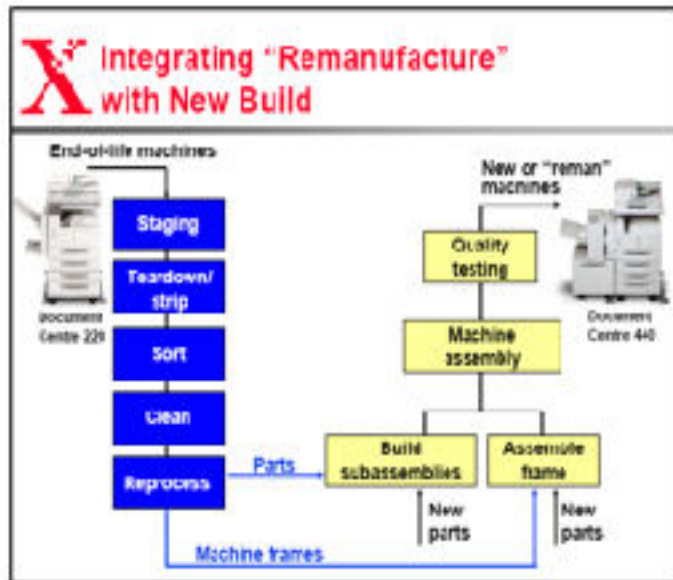
And, it does not disappear in 5 minutes as Xerox say!

SO WHY DID XEROX KEEP SELLING THEM AFTER THE WORLD HEALTH WARNED US IN 2008*?

*Health risks of ozone from long range transboundary pollution

Xerox got caught in a \$6 billion fraud in 2001

To regain profitability they sold used machines as “new models”



I.e. they sold old technology copiers as “New Models” for 10 years past World Health’s* warnings!

And

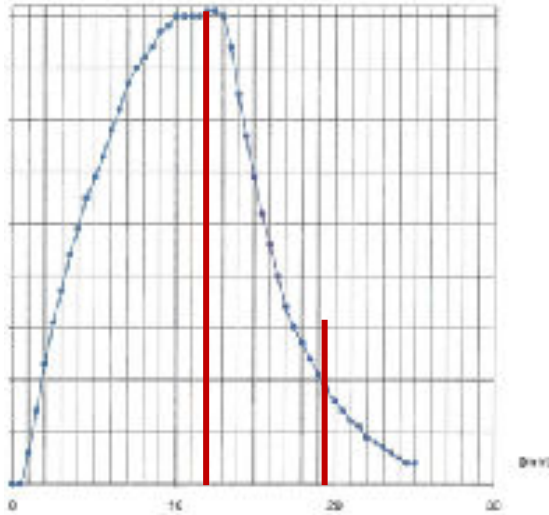
They lied about Half Life of ozone saying it disappeared in 5 minutes!

*Health risks of ozone from long range transboundary air pollution

World Health 2008

SO, WHERE DID XEROX'S 5 MINUTE MYTH COME FROM?

Answer: A German “for profit corporation’s” “Blue Angel” test, where;



- A. They put a copier in an O₃ free chamber.
- B. They run it for 10 minutes all the while pumping O₃ free air into the chamber.
- C. They continue to pump O₃ free air into the chamber after the copier shuts down – and then...
- D. They declare that ozone’s “half-life” is 5 minutes... i.e. the time it takes for readings in the chamber to drop in half i.e. as they pump O₃ free air into it!

Industry Promoted “Half Life” Fallacy

Sorry – ozone did not travel from Fort McMurray to kill people in Connecticut in minutes! **Our industry lied!**

“Ft. McMurray fires cause air pollution spike on the other side of the continent”

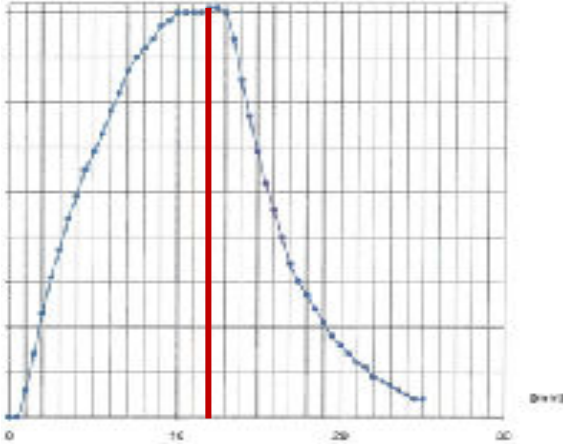
-Margo McDiarmid – CBC News – Sept. 26/2017

AND WHY ARE TEACHING STAFF AT RISK?

Recommend maximum 1.5mg/hr

WARNING

**Emissions are still climbing
@ 10 minutes (in “Blue Angel” tests).**



*RAL.UZ.122 “Blue Angel”** test graph
An independent for profit testing company



ANSWER

Our Industry only tests new copiers;

- New copiers (with new ozone filters).
- Only runs tests for 10 minutes.

Meanwhile EPA field tests show;

- Ozone emissions can be 33 times higher than what is reported.

33 times higher!

And Why:

- Because ozone filters fill with paper dust.
- Because technicians increase charges to reduce jams.

Which is Why

**EPA tests also show higher levels also return
in just a few weeks after service.**

AND WHY SHOULD CANADIAN FEDERAL EMPLOYEES BE CONCERNED?

MAXIMUM ALLOWABLE 1.5 mg/h

Bizhub 458: Ozone Emission Rate (mg/h)	1.5
Bizhub 558: Ozone Emission Rate (mg/h)	1.5
Bizhub 654: Ozone Emission Rate (mg/h)	<1.5
Bizhub C458: Ozone Emission Rate (mg/h)	1.5
Bizhub C558: Ozone Emission Rate (mg/h)	1.5

Downloaded June 10/2019 from Federal
Government Website

Instead of demanding ozone free copiers as are available today.

In 2019

Shared Services Canada awarded three vendors whose products released O3

At an “allowable” standard

I.e. a standard that was set by our industry not by science.

FYI re our federal government’s last tender

The tender started in 2016 – but had to be started a 2nd time when Xerox’s references came back poor.

Lobbyists Lobbyists Lobbyists

SO, WILL SMALL AMOUNTS OF OZONE KILL YOU?



NOT IMMEDIATELY – CANCER TAKES TIME

3 PPB ($6\mu\text{g}/\text{m}^3$) more exposure over 10 years indoors can make your lungs look like you've smoked a pack a day for 29 years...

Environmental Justice Report Aug. 14/2019
(See slide 13 for details)

BUT EXERTION AT HIGHER LEVELS

Could give you a **heart attack!**

O₃ kills lung cells that release histamines and histamines raise your blood pressure.



AND... ARE OUR CHILDREN SAFE?



Apparently Not!

After a summer of playing outdoors:

“20 – 25% of all children’s asthma attacks happen in the first weeks of September, when children go back to school!”

- Dr. Robert Oliphant, Pres. & CEO - Asthma Society of Canada Sept. 24/2014

AND WHY ARE CHILDREN AT RISK?

(If their school still has old technology copiers)

"Exposure to extremely low (ozone) concentrations indoors, increases the reactivity of airways to other substances".

- Canadian Centre for Health and Safety

“Resistance lowered indoors results in higher reaction rates outdoors.”

- Canadian Centre for Health and Safety



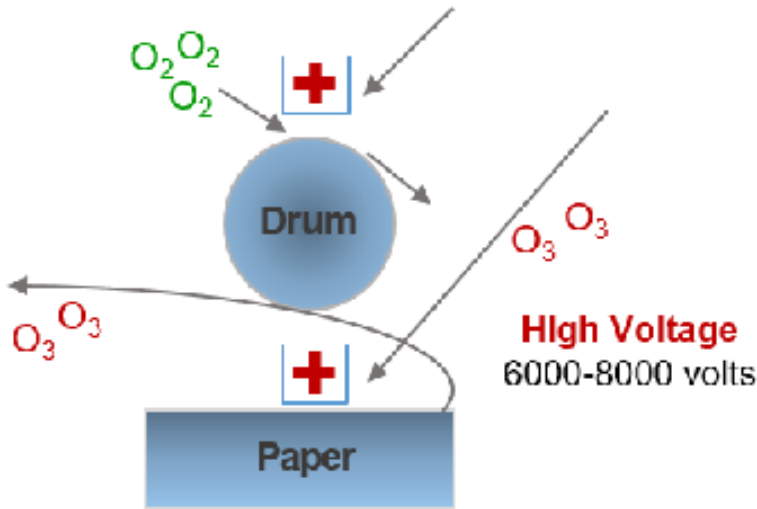
SO... ADD VENTILATION YOU SAY!



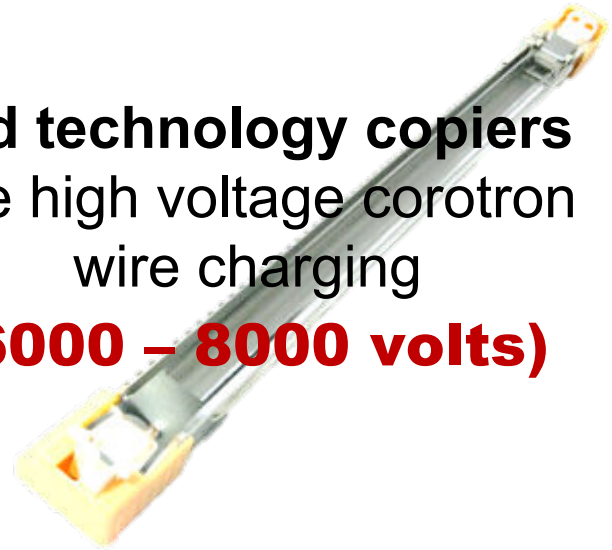
SORRY – IT'S NOT THAT SIMPLE!

- Older schools (and government offices) have asbestos that cannot be disturbed.
- Newer schools (and government offices) with false ceilings pump air from one room to the next.

SO EXPLAIN THE PROBLEM AGAIN



Old technology copiers
use high voltage corotron
wire charging
(6000 – 8000 volts)



High voltages split the O₂ molecule



Ozone filters fill with paper dust

And emissions can be **16-33 times higher**

The industry changed – but Xerox kept selling “new models”*

*Remanufactured old technology machines

BUT THE EPA SAYS WE'RE SAFE @ 150µg/m3

Sorry: Huge political forces (lobbying lobbying lobbying) distort and downplay the truth about pollution.

Take the EPA's outdoor standard for ozone at 150µg/m3 (now 140µg/m3)



The Obama Administration tried to lower it significantly – but Republicans in congress overruled him. – Sound familiar?

EPA ozone designations raise concerns of **political influence**
Gavin Bade – May 1/2018

SORRY – see slide 12

The World Health notes **“significant increases in mortality”** at... 50µg/m3

The American Lung Assoc. **sued the EPA citing increased mortality** at... 30µg/m3

David Suzuki says – **“There is no safe level”** ... 0µg/m3

CHECK THE DATES

CANADIANS ARE KEPT IN THE DARK!

A World Health [2008 Warning](#)

Kids get ozone strips in 2013



Cleaner air, healthier schools,
happier children
May 23/2013 – Captain Carbon

- **In England** – they figured it out in 2008 and **give kids ozone strips** to measure their exposures on the way to school – they know what kills them.
- **In Canada;**
 - It only got out into print (by accident) in Margo McDiarmid’s **Sept. 26/2017** piece about Fort McMurray fires.
 - And again on Tues **Sept. 10/2019** Toronto Star’s article about smog and then only on page 8.

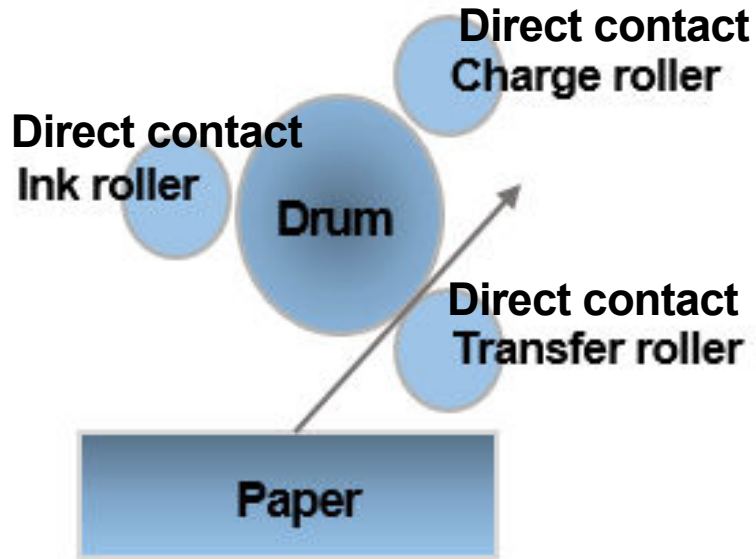
But ever so slowly – the word is getting out on this side of the planet!

“O₃ was the only pollutant associated with an additional decline in lung function.”

CNN – **Wed. Aug. 14/2019**

“Exposure to polluted air is like smoking a pack a day”

AND THE SOLUTION TO THE INDOOR OZONE COPIER PROBLEM?



DEMAND
"New Technology" Copiers
that use "direct contact"
low voltage charging
(250 volts)
That does not split O₂!

So – why doesn't everyone switch?

- Drums wear out with "direct contact" charging and...
- Not all manufacturers have long life drums.



**Kyocera long life drums
are patent protected**

AND WHY DIDN'T XEROX SWITCH?

Xerox is controlled by Carl Icahn
Who “profits from weak regulations”

Read about Carl

“Trump’s top regulations advisor
Billionaire **Carl Icahn will profit from
weak regulations.**”

Steve Horn – Dec 22/2016



“Xerox is Dying”

An assessment by current and past Xerox staff

They sold off last of their manufacturing interests in Fuji-Xerox in 2019.
Their access to new Fuji products expire in 2024.

SUMMARY

Huge political forces (lobbying) distort and downplay the truth about air pollution and ozone, the world's #1 pollutant.



One in 4 of us will die of cancer – lung and breast being the #1 and #2 killers. O3 converts paper dust into airborne carcinogens.

When it comes to pollution – it's not the concentration that counts
It's Concentration X Duration – Haber's Law

Sitting in a bad office for 10 years is the same at smoking a pack a day for 29 years.



If your copier has or had one of these (they're called corona wires) you were/are at risk.



Demand 100% ozone free copiers and buy them from Canadian companies not foreign controlled marketing branches i.e. Japanese, Korean or Chinese manufacturers who only want you to buy new equipment as soon as possible. Buy Canadian!

SO WHO SHOULD YOU BE BUYING FROM?

“Buy Canadian”

- When you buy from a manufacturer direct their objective is to sell you something new ASAP – I.e. every 5 years
- When you buy from a Canadian dealer, their objective is to keep you happy so that you renew. – I.e. renew and save \$
- When you buy from 4 Office we guarantee what we sell for 8 years and have major clients who go 8, 9, 10 and longer.

They save \$ millions\$

OH – And yes the products we sell are ozone free

