CRAC/96FM Air Pollution Monitoring Walk in Cork City

10TH APRIL 2018

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What we monitored…and how

Used a DustTrak II to monitor PM$_{2.5}$ to measure the number of micrograms (µg) per m$^3$

Weight of ONE paper clip = One million µg
Why did we do the walk?

Cork City Council bans private cars from driving down St Patrick’s Street in afternoons

Cork City Council does no roadside monitoring in the City
Pre-restriction (13:20 – 14:15) Route

- Started at top of Patrick’s Street
- Stopped at several points on route
- Moved to Grattan Street via Daunt Square
- Finished at top of Patrick’s Street

**Average value: 45.4 µg/m³**
Pre-restriction (13:20 – 14:15) Values

Concentrations Before Restrictions

PM Concentration

Average Concentration

Patrick's Street
Daunt Sq.
Grattan Street
Northmain Str.

Concentration (µg/m$^3$)
During restriction (15:15 – 16:20) Route

• Started at top of Patrick’s Street
• Stopped at several points on route
• Moved to Grattan Street via Daunt Square
• Finished at Soho, Grand Parade
• Average value: 41.2 µg/m³
During restriction (15:15 – 16:20) Values

Concentrations During Restrictions

- PM Concentration
- Average Concentration

Patrick's Street
Daunt Sq.
Northmain Str.
Grattan Street

Concentration (µg/m³)

Time

Comparison of Average Values

• Values at St Patrick’s Street reduced during restrictions
• Daunt Square elevated levels during restrictions (reaching London values)
• North Main Street elevated during restrictions
• Grattan Street values similar for both walks
Off-road Cork Comparison

The new off-road CRACLab facility on Distillery Fields measured 8.5 μg/m³ at the time of our roadside walks.
Conclusions….with a Health Warning

PM$_{2.5}$ air pollution follows the traffic….overall average is misleading
Healthier to shop in St Patrick’s Street during traffic restrictions
But Gaunt Square (where people often sit) shows very elevated levels of PM$_{2.5}$
during traffic restriction

Health Warning
One afternoon of air monitoring under one set of weather conditions is not enough
to draw firm conclusions
Cork City Council should continuously monitor Cork’s air, not just for particulates
but nitrogen dioxide and ozone too.
Remember EACH 10 $\mu$g/m$^3$ of PM$_{2.5}$ reduces the ability of infants to fight infection
by 15-25%…..even with short term exposures.