

# Cycling and Health

supplement to Spokes Bulletin 125

**Getting about by bike is great for you!!** Middle-aged people who cycle regularly typically enjoy the fitness level of someone 10 years younger, and gain two years in life expectancy. **And it's great for society**, reducing pressures on the NHS, on our worsening climate and on our fragile environment.



photo: [www.stewartbryden.com](http://www.stewartbryden.com)

But what of the dangers that worry people - **crashes** and **pollution** - whether on a bike or too scared to use one? Yes, these are very serious and must be tackled - but they are hugely outweighed by the benefits.

## Road Danger

The health benefits of cycling outweigh injury risks by between 13:1 and 415:1, according to various studies - the most quoted figure being 20:1. In other words, 20 life-years are gained due to the benefits of cycling for every life-year lost through injury.

What is more, you can often cut the risks much further by choice of route, even where there is no path or segregated on-road route. Risk of death per billion kilometres cycled on an *urban minor road* is 5 times lower than on an *urban 'A' road* and 20 times lower than on a *rural 'A' road*, [Spokes 117 p5].

## Air Pollution

Recent years have seen growing awareness of the invisible menace of poisonous air pollution from motor traffic, on top of its climate-damaging emissions. In Scotland, 2500 people a year suffer early death due to toxic pollution, compared to 200 deaths on the road, and the average person's life is thought to be cut by over 6 months.

However, despite these dangers, new international research shows that the physical activity benefits of cycling (and walking) outweigh the risks from pollution in every UK city. Even in Delhi, one of the most polluted cities in the world, you can cycle for five hours a day before the pollution risks outweigh the physical activity benefits [search for *air pollution risk* at [theguardian.com](http://theguardian.com)].

To investigate these issues our summer public meeting [below] is on *Cycling and Health* and this supplement covers physical activity, air pollution and road danger, with pages by relevant experts.



photo: [edinburghcyclechic.wordpress.com](http://edinburghcyclechic.wordpress.com)

**Summer Public Meeting : all welcome : Mon 13 June**  
This event is part of *Edinburgh Festival of Cycling* [edfoc.org.uk](http://edfoc.org.uk)

# Cycling and Health

**Come along to hear and debate the issues with a medical and a legal expert, a pollution campaigner and a politician .. all of whom use a bike regularly**

- ◆ the massive health benefits of cycling
- ◆ the risks from pollution and crashes
- ◆ how we can up the benefits & down the risks

the medical expert	the pollution expert	the legal expert	the political expert
<b>Prof Chris Oliver</b>	<b>Emilia Hanna</b>	<b>Jodi Gordon</b>	<b>CLr Cammy Day</b>
Honorary Professor of Physical Activity at Edinburgh University	Friends of the Earth Air Pollution Campaigner	Assistant Solicitor at Cycle Law Scotland	Vice Convener of Edinburgh City Council's Health Committee

**Four short talks, then audience QA and panel discussion ...**

**chaired by Dr Helen Zealley**  
former Public Health Director at NHS Lothian

**SPOKES**

For meeting tweeting, use hashtag #SpokesMtg

**STARTS 7.30PM, DOORS OPEN 6.45, ENDS 9.30**  
**Augustine United Church, George IV Bridge, Edinburgh**

☀ Come early ☕ coffee 🚲 Spokes stall 🖼 exhibition 💬 chat

Organised by **Spokes The Lothian Cycle Campaign** [spokes@spokes.org.uk](http://spokes@spokes.org.uk) (0131) 313 2114 (Ansaphone)  
St Martin's Community Resource Centre, 232 Dalry Rd, Edinburgh EH11 2JG [www.spokes.org.uk](http://www.spokes.org.uk) Twitter: @SpokesLothian

More meeting details at [spokes.org.uk](http://spokes.org.uk) or twitter #SpokesMtg

**This *Cycling and Health* supplement to Spokes #125 is kindly sponsored by ...**

**CYCLE LAW SCOTLAND**



# Cycling & Health — Physical Activity

**Cycling is an easy way to build exercise into daily life, save money, get fit and help the environment. And it's easier on joints than high-impact activity like running.**

The Chief Medical Officer's Physical Activity Guidelines [below] recommend at least 150 minutes a week of activities like cycling.

**Lifespan** – Regular cycling is a great way to increase longevity, being associated with increased 'life-years' even when adjusted for injury risks - 20 life-years are gained through cycling for every year lost through injury. Middle-aged people who cycle regularly typically enjoy the fitness level of someone 10 years younger, and gain two years in life expectancy.

**Obesity, weight control and diabetes** – Cycling, combined with a healthy diet, is a good way to control weight and lower the risk of diabetes. It raises the metabolic rate, builds muscle and burns body fat, and is a comfortable form of exercise which you can vary and build up slowly. A daily half-hour bike ride will burn nearly five kilograms of fat over a year. Lack of physical activity is thought to be a major reason why type II maturity onset diabetes is dramatically increasing, a major public health concern. Without action, 60% of men, 50% of women and 25% of children will be obese by 2050 in the UK, costing the NHS £10 bn a year

**Cardiovascular disease** - regular cycling stimulates your heart, lungs and circulation, reducing the risk of stroke, high blood pressure and heart attack.

**Cancer** - Exercise reduces your risk of colon and breast cancer, and research has found cycling reduces the risk of bowel cancer.

**Bone injuries and arthritis** - Cycling improves coordination, strength and balance and may help prevent falls and fractures. Being a low-impact, with little stress on joints, it's also an ideal form of exercise for osteoarthritis. Around 70% of body weight goes through the saddle and handlebars instead of your ankles; and the bigger you are, the more important that is!

**Mental illness** - Mental health conditions like depression, stress and anxiety can be reduced by regular cycling. This is due to the effects of the exercise, producing endorphins, and because riding a bike can bring great enjoyment.

See [spokes.org.uk/bulletin](http://spokes.org.uk/bulletin) for a fuller version of this article



**Prof Chris Oliver**

Professor of Physical Activity for Health, University of Edinburgh  
Consultant Trauma Orthopaedic Hand Surgeon, Royal Infirmary of Edinburgh

Twitter @CyclingSurgeon

Wikipedia

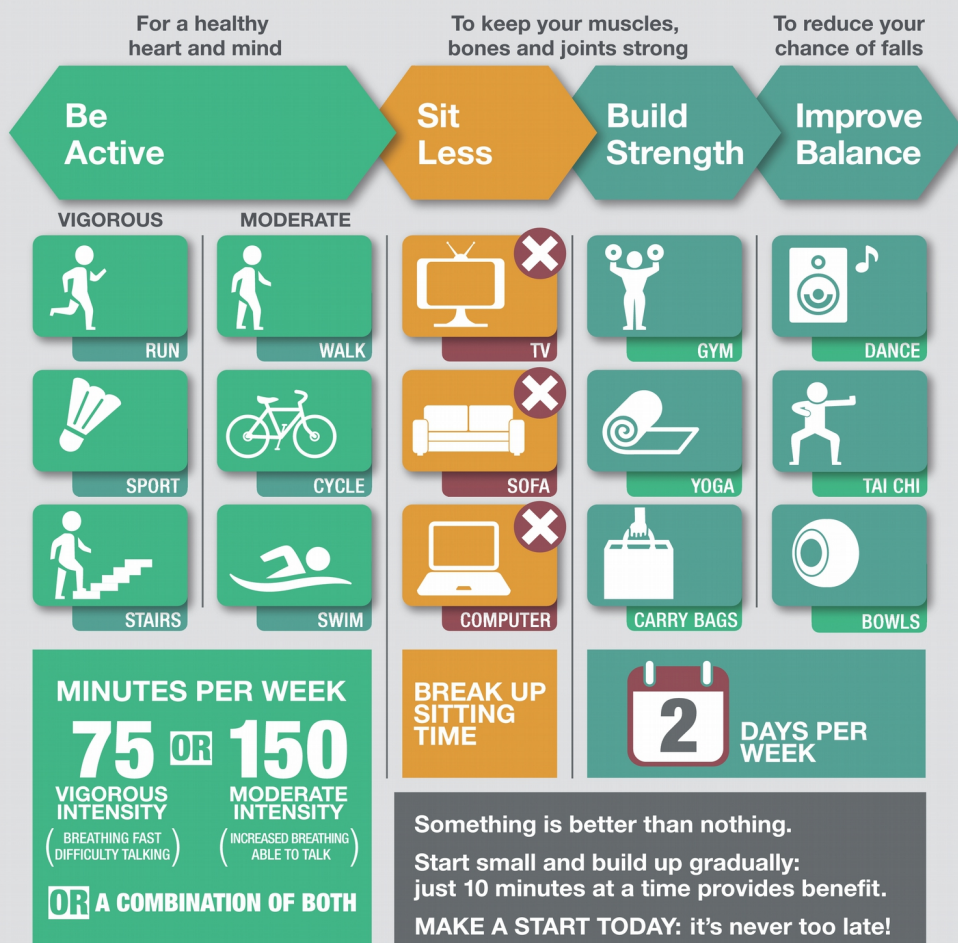
[en.m.wikipedia.org/wiki/Chris\\_Oliver\\_\(surgeon\)](http://en.m.wikipedia.org/wiki/Chris_Oliver_(surgeon))

## Physical activity benefits for adults and older adults

- BENEFITS HEALTH
- IMPROVES SLEEP
- MAINTAINS HEALTHY WEIGHT
- MANAGES STRESS
- IMPROVES QUALITY OF LIFE

REDUCES YOUR CHANCE OF	Type II Diabetes	-40%
	Cardiovascular Disease	-35%
	Falls, Depression and Dementia	-30%
	Joint and Back Pain	-25%
	Cancers (Colon and Breast)	-20%

## What should you do?



UK Chief Medical Officers' Guidelines 2011 **Start Active, Stay Active:** <http://bit.ly/startactive>

For a larger version of this infographic, go to [bit.ly/startactive](http://bit.ly/startactive)

# Cycling & Health -- Pollution

## Invisible yet Harmful to Health

Outdoor air pollution kills over 2500 people a year in Scotland. It plays a part in cancer, asthma, strokes, heart disease; even diabetes, obesity and dementia.

Children, the elderly and people in poverty are hit hardest - but everyone is affected to a greater or lesser degree, and air pollution shaves 7-8 months off the average person's life in the UK.

Yet the Scottish Government continues to break binding European legal limits for air pollution, 6 years after a deadline. Air quality safety standards are failing in 32 Pollution Zones across Scotland, including in Glasgow, Aberdeen, Dundee, Edinburgh and smaller towns like Crieff and Linlithgow.

PM <sub>10</sub> : Worst streets in Scotland		NO <sub>2</sub> : Worst streets in Scotland	
Edinburgh Salamander St	23	Edinburgh St John's Rd	65
Aberdeen Wellington Rd	22	Glasgow Kerbside	60
Perth Atholl Street	20	Dundee Seagate	50
Aberdeen Market Street 2	19	Perth Atholl St	48
Glasgow Dumbarton Rd	19	Dundee Lochee Rd	48
Dundee Lochee Road	19	Aberdeen Union St Roadside	46
Falkirk West Bridge St	18	Edinburgh Queensferry Rd	41
S Lanarkshire Rutherglen	18	Aberdeen Wellington Rd	41

Health standard = 18µgm / m<sup>3</sup>

Health standard = 40µgm / m<sup>3</sup>

## Road traffic the main source

Road traffic is the main source of Scotland's air pollution, responsible for around 80% of our urban Nitrogen Dioxide pollution.

Road traffic also causes a large - and growing - chunk of Scotland's climate emissions. Whilst other sectors have reduced carbon emissions year on year, transport still pours out almost as much carbon as in 1990. So the changes that would clean our air would also help stop our planet from overheating.

## We call on the Scottish Government to..

1. Shift our *car is king* culture to more sustainable transport modes - make 20mph zones the national norm, introduce workplace parking levies for large employers, and investigate urban congestion charges.



2. Roll out a network of *Low Emission Zones* in towns and cities by 2018, where the most polluting vehicles would be banned or have to pay hefty fines

3. Invest 10% of transport funds in walking/cycling.



by **Emilia Hanna**

Air Pollution Campaigner

Friends of the Earth Scotland

See [spokes.org.uk/bulletin](http://spokes.org.uk/bulletin) for a fuller and referenced version of this article

## Can pedalling help?

In short, YES. Studies are beginning to show that increased cycling correlates with improved air quality. It's a no brainer - using a bike eliminates a car trip, which in turn means cleaner air.

Sevilla has achieved inspirational cycle use growth, with a hugely impressive mode share increase from 0.5% to 7% between 2006 and 2013, through major infrastructure investment, a big bike-share scheme and measures to reduce motorised traffic. At the same time, Nitrogen Dioxide levels fell from 52 µg/m<sup>3</sup> in 2000 to just 25 µg/m<sup>3</sup> in 2012, meeting Europe's air quality Nitrogen Dioxide legal limit (40 µg/m<sup>3</sup>).

## What Must the Scottish Government do?

Despite growing enthusiasm for cycling, still less than 2% of all trips are by bike. Roads are skewed in favour of cars and many people feel it is not safe or convenient to cycle. The Scottish Government invests under 2% of its transport budget in walking/cycling.

The Government has promised to meet European air quality standards by 2020, through a new Strategy, *Cleaner Air for Scotland*. Friends of the Earth Scotland is campaigning to ensure that the Government delivers on this promise.

FOE Scotland is tackling air pollution within an overarching Fossil-Free Scotland campaign, which aims for a just transition to a 100% renewable, nuclear-free, zero fossil fuel Scotland.

## What you can do..

### 1. Be part of the solution by using your bike

Choosing a bike and ditching the car means you are cutting down on air pollution, congestion, and climate emissions - and getting fit and healthy in the process.

### 2. Find out if you live in a Pollution Zone - visit

[www.scottishairquality.co.uk/laqm/aqma](http://www.scottishairquality.co.uk/laqm/aqma)

### 3. Check out the Scottish Government's Air Quality Website.

If you feel particularly susceptible to everyday air pollution, you can see live pollution readings and subscribe to the Government's "Know and Respond" service to receive alerts when air pollution is high - see [www.scottishairquality.co.uk](http://www.scottishairquality.co.uk).

### 4. Contact your MSPs about cycling & pollution

The new Parliament is a new opportunity to push for action on transport. You can contact your MSPs using [www.writetothem.com](http://www.writetothem.com). If you feel personally affected and/or if you live or work in a Pollution Zone, say so.

### 5. Join Friends of the Earth Scotland as a member ... and help us fight for clean air every day.

Join us today at [www.foe-scotland.org.uk/join](http://www.foe-scotland.org.uk/join)



# Cycling & Health — Road Dangers

The health benefits and years of life gained from getting about by bike greatly outweigh the dangers of the road. Nonetheless, in 2014, serious injury to cyclists in Scotland was nearly 16% higher than the 2004-2008 average, with 155 reported cases, and can only partly be explained by higher levels of cycling. For that same year, we analysed our case data alongside other publicly available research. The findings showed that the main risk of collision between a cyclist and motor vehicle is at junctions, particularly on urban roads.

## Junctions

Cyclists are especially vulnerable at road junctions. Extra care should be taken when approaching or moving away from a junction. Drivers can pull out in front of a cyclist. Drivers may turn left in front of you without signalling, or may go straight on despite signalling. Always get eye contact, ride defensively and expect the unexpected.



## Roundabouts

Roundabouts present a considerable hazard to cyclists. As well as the risk provided by road defects on or around roundabouts, including diesel spills, there's the added hazard of drivers not seeing cyclists as they concentrate on larger moving vehicles.



## Dooring

Dooring occurs when a motorist opens the door of their vehicle without first checking for oncoming traffic. Motorists making a manoeuvre without checking their mirrors may not spot a cyclist alongside their vehicle. Try to ride outside the door zone when passing parked cars.

## Road Surface Defects

Potholes and other road surface defects are particularly hazardous for cyclists. Hitting potholes or adjusting ride lines to avoid potholes in busy traffic can lead to impact injuries. Claims against Roads Authorities can be tricky so photographs and measurements are essential. The case of Robinson v Scottish Borders Council 2016 brought by Cycle Law Scotland highlights the issues and confirms roads inspectors must consider all traffic not just motorised.



## Working to increase cycling and safety

Much more can and should be done to improve road share culture including building segregated infrastructure where possible, cycling training, education and legislation in the form of presumed liability. You can help fight for such changes by speaking to or emailing your MSPs.

## What to do at a crash scene

**Contact** the police by phoning 999 if anyone is injured or the collision has caused an obstruction on the road; **note** the details of the driver involved including the car **registration** number and take lots of **photos** before writing down what had happened while everything is still fresh in your memory. Then call the **Cycle Law Scotland** team on **0333 555 7783**.



by **Jodi Gordon**  
Cycling Lawyer

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