

# Current use of biodiesel no more harmful than regular diesel

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Up to seven per cent biodiesel blended in regular diesel will presumably not cause greater health risks for the population than the use of pure fossil diesel. This is the main conclusion in a memorandum from the Norwegian Institute of Public Health and the Climate and Pollution Control Agency (formerly SFT) to the Ministry of Health and Care Services and the Ministry of the Environment in Norway.

"A higher content of biodiesel (up to 20 per cent) requires more research to assess [health effects](#). This must include different types of biofuels and blending ratios, as well as physical and technical factors that are relevant in Norway," said Per Schwarze from the Norwegian Institute of Public Health

## Effect on emissions of particulates and nitrogen oxide

A number of studies have examined the effects that blending biodiesel in regular diesel has on air emissions, especially for [nitrogen oxides](#) (NO<sub>x</sub>) and particulates. Most reports show that NO<sub>x</sub> emissions increase slightly, but this depends on the type of [biofuel](#) and engine technology. However the particle mass in the emissions seems to decrease. The size distribution and number of particles can be changed by blending in biodiesel, which can affect health.

## Little research on the health effects of biodiesel

Knowledge about the possible health effects from the use of biofuels is limited. There have been few studies of biodiesel exhaust on humans and animals. Therefore, much is based on studies of gene and cell damage and inflammatory responses in [cell cultures](#). Overall, the present studies suggest that there are not very large differences between the effects of biodiesel and diesel.

"However, there have been comprehensive studies in which one compares different types of biodiesel and diesel," said Schwarze

## **Automotive technology and type of biofuels significant**

Studies indicate that the effect of processing equipment, such as particle filters, is as important as the use of diesel type. The results seem to depend on several factors, such as driving cycle, temperature, engine type, fuel mixture and filtering equipment.

## **More research is needed**

For increased blending of biodiesel (up to 20-30 per cent) more research is required. This applies both to the choice of biofuels (including second generation) and different blending ratios between biodiesel and [diesel](#) in order to study possible interaction effects on health. It is also important to use engine technology and air temperatures that are relevant for Norwegian conditions in the studies.

Provided by Norwegian Institute of Public Health

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